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ABSTRACT

The observations of a teacher educator who spent a semester teaching in a mainstreamed elementary classroom are recorded in this monograph. Case studies of students form the framework for the consideration of the broader implications and problems involved in mainstreaming. Illustrative classroom practices are offered to clarify such concepts as teaching children to value diversity, managing the classroom environment, adapting curriculum to special needs, and individualizing instruction. Four teacher competencies are identified as essential for teachers of mainstreamed handicapped children: (1) the ability to teach children to value individual differences; (2) individual and group management techniques which create a positive learning climate and allow children to spend time on tasks; (3) the ability to assess needs, provide appropriate instruction, and keep records on pupil progress toward established objectives; and (4) the ability to modify curriculum when it is necessary to meet individual student needs. (JD)

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PERSPECTIVES OF AN IVORY TOWER REALIST

Catherine V. Morsink

Dean's Grant Project
University of Kentucky
Lexington, Kentucky

April 1981

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MAINSTREAMING

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PERSPECTIVES OF AN IVORY TOWER REALIST

by

Catherine V. Morsink

Produced by

Dean's Grant Project
College of Education
University of Kentucky
Lexington, Kentucky 40506

April, 1981

FOREWORD

The central purpose of the College of Education Dean's Grant Project at the University of Kentucky has been to open doors of opportunity to all persons with individual differences through improving personnel preparation programs for education of the handicapped. The stimulation of program changes at both graduate and undergraduate levels and the encouragement of staff development efforts have been the arenas in which project activities have been concentrated.

A factor inhibiting the effectiveness of our work with teachers in preparation and with experienced school personnel has been the inability of college faculty to draw on a direct experience base to make their points. Too often ideas relating to mainstreaming and the teaching of children with learning handicaps in the regular classroom were discounted because they lacked the reality of direct experience. To remedy this situation Dr. Catherine Morsink, co-director of our Dean's Grant Project and a University of Kentucky professor of special education, proposed to return to a public school classroom for a full semester to teach a regular third grade group which included a number of "mainstreamed" handicapped children. The principal purposes of the activity were (1) to identify problems and issues having implications for the design of initial preparation programs of classroom teachers, and (2) to explore the feasibility of such experience as basis for staff development of professional personnel in teacher education. Because of limitations of time, Dr. Morsink's study focused on four "clusters of capabilities" identified by Reynolds et al., in A Common Body of Practice for Teachers: The Challenge of Public Law 94-142 to Teacher Education.

We acknowledge with gratitude the grant from the United States Department of Education Office of Special Education and Rehabilitation Services which made both the classroom experience and this report of it possible. One measure of the success of the experience may be found in the approval of a similar experience for two additional College of Education faculty members during the current year.

We are appreciative of the splendid support and cooperation provided by a large number of Fayette County public school personnel. Special thanks should go to Superintendent Guy Potts, and to Walter Hall, Norman Osborne, Natalie Patterson, and Jean Arnold for their endorsement and facilitation of this project. Thanks, too, should go to the teaching staff of the Cardinal Valley School and in particular to its principal, Ron Beckett, and to Linda Price, diagnostician.

Many University of Kentucky faculty and staff provided help at a number of points during the project. From the Department of Special Education, Don Cross, Michael Nelson, and Edward Blackhurst were especially supportive. Jim Skouge, a graduate student in the department, tutored a student in Dr. Morsink's class while Ernest Middleton, a faculty member from the Department of Curriculum and Instruction, provided considerable

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assistance in addressing the problems of minority children in the class.

Another group of faculty colleagues prepared papers exploring the knowledge base associated with some of the instructional problems addressed in the project. They include David L. and Kathy Boyle Gast, Thomas R. Guskey, Mattie Hemenway, Ernest Middleton, Gary Pruitt, Elfrieda Hiebert, Elizabeth Nelli, Michael Nelson, Norma Nutter, and Richard L. Warren. Their efforts are summarized in a separate Dean's Grant publication, Toward a Research Base for the Least Restrictive Environment: A Collection of Papers.

Other University of Kentucky associates who contributed much to the project in its final stages were Elizabeth Nelli for editorial assistance, Mona "Mainstream" Richards who typed numerous drafts and tracked down references, Dan Vantreese who prepared the cover artwork and handled the reproduction of figures, and Bob Kennoy who prepared the graphs. Ruby Russell both provided editorial assistance and typed the final copy.

Special recognition should be accorded Carol Chase Thomas, research assistant for the Dean's Grant, who coordinated the efforts of the many individuals associated with the project, and provided valuable editorial assistance as well.

The pages which follow summarize the experience and insights of one teacher educator brave enough to subject to classroom test some of her ideas about education's need to respond to the challenge of individual differences in America's children and youth. For her willingness to accept that challenge and work toward a melding of educational theory and practice, and for her willingness to expose to professional scrutiny her failures along with her successes, we are grateful.

George Denemark
Dean, College of Education
Co-Director, Dean's Grant
University of Kentucky

April, 1981

PREFACE

The year was 1956. I was 19, teaching in a two-room country school even though I had only an emergency teaching certificate. My class of 17 third through sixth graders included two students who would now be labeled handicapped--Laurie, a sixth grader who could not read, and Joe, a fourth grade discipline problem. It never occurred to me that they should not be in my class, but it disturbed me to think I could not help them very much. I wanted to, but there was never enough time, and there was so much I did not know.

It seemed to me that teaching a large diverse group of children was a most important and most difficult job. The teacher of a heterogeneous group had to do so many things--help children learn to value individual differences, create a warm and stimulating learning environment, manage a dozen simultaneous activities, plan and implement a myriad of multilevel lessons, serve as mentor, taskmaster, catalyst, comforter, and guide. I was awed and inspired by the challenges of my chosen profession. The greatest of those challenges was presented by the children who deviated furthest from the norms.

There was so much I did not know. So I went back to college for the B.A. Degree, and subsequently taught in classrooms at every grade level, kindergarten through sixth. After returning for my Master's Degree, I taught in remedial reading, gifted, and special education programs for the learning disabled and mentally retarded. I was much more effective in teaching basic skills to children in small group settings than I had been in regular classes, but I missed the creative activities and group interactions. I wondered if the special education students missed those things too. It seemed that the best of both worlds could be provided if mildly handicapped children could receive special instruction in regular classes.

I still did not know how to work with handicapped children in large group settings, so I went back for the doctorate. At the higher education level I taught teachers to work with special children in small group special classes. Most of my students mastered the skills that enabled them to be successful resource room teachers. At that point neither they nor I needed to demonstrate that we could use these skills effectively in large group "mainstream" classrooms.

Then suddenly, in 1975, there was a new reality, mandated by Public Law 94-142. Handicapped children were to be educated in the "least restrictive environment," the setting most nearly like the one in which non-handicapped children were placed. In many cases this would be the regular classroom, at least part-time. Like most other educators, I welcomed the law which seemed at last to ensure the rights of all handicapped children to a free, appropriate education. Also, like most others, I underestimated the personnel preparation requirements for implementing this legislation and oversimplified the proposed solution to the massive problem of preparing classroom teachers to deal effectively with "mainstreamed" handicapped children. It seemed logical to assume that what classroom teachers needed was the knowledge, attitudes, and skills that were imparted to "special educators" in their preservice education programs.

Proposals to re-train classroom teachers in special education methodology were logical but often simplistic. Elementary school teachers insisted that they could not manage such diversity in regular classrooms, regardless of how they were trained. Special educators who had utilized their methods successfully in one-to-one or small group settings frequently overlooked the differences between their roles in specialized environments and the multifaceted task of the elementary teacher who was called upon to manage a large group with diverse needs. An either/or conflict seemed to be emerging; either classroom teachers could not work effectively with mainstreamed handicapped children no matter how they were prepared to do so, or they could manage children with diverse needs in the "mainstream" environment if only they mastered essential special education skills.

As one of the special educators who viewed the "mainstreaming" problem from the safety of the ivory tower, I was inclined to support the position that elementary teachers needed to master special education skills. But even in my most arrogant moments, I recalled that I had never had the experience of teaching handicapped children in regular class settings. This experience gap was unfortunately characteristic of the majority of special education professors in institutions of higher education. Most of us simply did not know whether, or how, the classroom teacher could be trained to work effectively with mainstreamed handicapped children. This was the question I stepped down from the tower to investigate.

It was a semester-long experience in which I served as the only teacher in a self-contained elementary classroom with five to ten mainstreamed mildly handicapped children. The purpose of this experience was to help me identify some of the issues which might have implications for the design of preservice programs for classroom teachers. Since it was a case study, it was designed to do what a case study can do best--present an in-depth view of a specific situation, describe the variables which might be manipulated, and raise some questions for further study.

As "research" it was essentially descriptive of what was happening, rather than necessarily prescriptive of what should be. The experience lasted for 19 teaching weeks--81 teaching days, plus 3 records or inservice days, and 6 additional days on which I had to travel out of town for national committees. I was in the classroom teaching children for nearly five hours a day, in my room on "bus duty" approximately another 30 minutes daily, and on recess duty (25 minutes) every morning. All teachers ate in the cafeteria with their children, usually at a separate "teachers' table." I had two 25-minute breaks a day, one when the children had music or physical education, and the other during afternoon recess when I was not on duty. There was also a library break once a week for 25 minutes. I attended faculty meetings, committee meetings for placement of exceptional children, and PTA. I was the recipient of two inservice training sessions, and the presenter of two others. In addition, I taught a graduate class in remediating learning disabilities one afternoon a week; it was open on a drop-in basis to any teachers who wished to attend. I spent at least an hour every day talking with my fellow teachers, usually in the cafeteria or the faculty lounge. I averaged three hours a night and five each weekend on pre/post instructional "homework."

Most of the data collected during the semester were observational; they consisted of tape-recorded transcriptions of my impressions of what had happened during the day, recorded in the car on my way home from school. There are over 800 typewritten pages of these transcriptions. I also developed simple systems which enabled me to collect data daily on the on-task behavior of the whole class and, as needed, data on the academic performance of selected groups and individuals. I saved reams of children's work samples. By the end of the semester I could have written an Individualized Education Plan (IEP) for each of my 24 children.

I was particularly interested in finding out (1) whether a well-prepared classroom teacher could manage the behavior and meet the academic needs of mildly handicapped children in the "mainstream" classroom, and (2) whether the competencies believed to be essential for classroom teachers mainstreaming handicapped children were, in fact, the ones they needed. I selected from the most widely accepted list of such competencies (Reynolds, 1980) four of the ten, and focused attention on these clusters:

1. Professional values (teacher modeling of acceptance and ability to teach children to value diversity)
2. Class management (individual and group management techniques which enable teachers to create positive learning climate and allow children to spend time on task)
3. Individualized teaching (methods which allow teachers to assess needs, provide appropriate instruction, and keep records on pupil progress toward established objectives)
4. Curriculum ("subject" deliberately taught in school, with modifications for individual needs).

I concluded that I, as a well-prepared classroom teacher, could manage the behavior and meet some of the academic needs of mildly handicapped children in the mainstream classroom and that the competency clusters I had studied were indeed important ones for me. In addition, I observed that the role of the classroom teacher is/ought to be different from that of the special education resource teacher. The classroom teacher needs to learn how to manage individuals in large group settings; much of the special education methodology is designed for intensive one-on-one settings which differ significantly from the regular classroom. Classroom teachers can help the special child most when they facilitate integration and acceptance in the classroom, while working with resource persons who provide highly specialized remedial instruction. Attempts by the classroom teacher to assume the specialist role may even intensify the handicapped child's problems by calling attention to differences rather than emphasizing commonalities. Teacher management strategies which are "behavioristic" in implementation can be very "humanistic" in their effects on classroom climate and individuals' growth and development.

Most classroom teachers presently receive preservice preparation which is quite narrow in its scope. It does not provide them with a sufficiently large repertoire of methodology to deal with children who have any significant kinds of "differences." (What can I do if/when . . . and how do I know if it's working . . . what else can I try if that doesn't work?) Teachers need preservice programs in which they learn, from day one, that they are expected to deal with diversity, rather than homogeneity. Teachers who anticipate classrooms full of average students are psychologically unprepared to accept children with differences.

Special educators may contribute to the problem by creating the illusion that they are the only ones who know how to teach children with special needs. Good teachers already know how to work with "special children," and much of what they do is what special educators are suggesting "regular" teachers need inservice training to learn how to do. The artificial dichotomy of "regular" and "special" education may create an assumption that classroom teachers "can't work with these children."

It is possible for one teacher working with 24 children in a self-contained classroom to create a positive learning climate, adapt many aspects of the curriculum to special needs, and "individualize" teaching. Some of the workable methods for accomplishing this goal include use of modified "mastery learning" and data-based program evaluation, peer tutoring, and the provision of creative/innovative activities in learning centers or flexible grouping formats. It is not possible, however, for one teacher working alone to provide enough high quality direct instruction to ensure that the academic needs of mainstreamed mildly handicapped children are met. This requires part-time specialized instruction in small group settings.

Both classroom teachers and resource personnel in special education and related fields need to learn new skills which enable them to collaborate as members of an instructional team. Teachers in the future will be more than isolated specialists who "do their own thing" behind closed doors.

Two products--a teacher's manual of suggested practices and this teacher educator's monograph--were developed as a result of my study, supported by a Dean's Grant from the Office of Special Education. The following chapters present the context for the field study, describe the ways in which each of the four competency clusters were explored, and suggest possible implications for preservice teacher education programs.

Catherine Morsink

April, 1981

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Chapter One

DOWN FROM THE TOWER: THE CONTEXT FOR REALITY

For children and teachers in classrooms, the world today is quite different from the world of 1956, the year in which I began to teach. Since that time schools and society have undergone significant changes. Demographic studies suggest that the family has little resemblance to what it was. The roles of women--once the most important in the family--are now drastically different. Children of the '80s experience debilitating social problems which were previously encountered only by adults. The concept of America as a cultural melting pot has been replaced by that of a diverse, multicultural society, and the public schools reflect in miniature that society. Schools face staggering problems, including severe budgetary constraints and declining test scores, with resultant pressures for accountability. Teachers face new pressures, and many became hostile to the increased workloads they anticipated from mainstreaming handicapped children. Reading about these changes in a newspaper or textbook is not the same as "living" in a school environment in which they provide the context for reality. My experience suggests that beginning teachers need to be prepared for this reality.

Case Study: Scott

During the second week of my teaching experience, I encountered a segment of this reality in a way that was sudden and traumatic. It occurred one day after school when I returned to my room from a faculty meeting. Scott had stayed after school to help me, as he had done every day since I had begun to teach. Scott's parents were divorced and his mother had to work. His teenage sister had her own interests and was rarely home, so Scott stayed after school. He washed the boards and helped to grade papers and to hang pictures on the wall. And, of course, we talked a lot. I did not mind having him around because he was a neat little kid. I had no idea how much being there meant to him. I had no idea how many other children needed someone for company and somewhere to go after school. At any rate, there was a faculty meeting that afternoon, so I told Scott I was sorry I had to go and suggested that he put his things away and go home. When I returned from the meeting, about 45 minutes later, one of my girls was there to pick up a book she had forgotten. When she saw me she asked, "What's wrong with Scott?" She told me that when she came in earlier to look for her book Scott was crying and crying and had sobbed, "I'm the loneliest person in the world." Suddenly I understood and wished desperately that I had been in the room that afternoon. He was a lonely child who needed someone to care, and he thought that no one did. I was soon to learn that my class was full of Scotts, some the children of single and/or working parents who came to school with keys around their necks; others, children to whom adult problems--like crime, poverty, and depression--had already become ugly realities in their young lives.

I went home that night and cried. I cried for Scott, who had no one to greet him, smiling, at the door and serve him hot chocolate with homemade cookies, the way I had fantasized that mommies should. I cried for my own children, now nearly grown, who had come home to an empty house half of their young lives. I cried for all the children in schools who had never had a stay-home mommy, a regularly employed father, or a safe place they could call home.

The case of Scott was painfully illustrative of the context for reality into which I had been thrust. Perhaps it was ironic that my reaction to the incident probably paralleled the feelings of many others in my age bracket, and that our lack of understanding of the present realities for American families and kids had created part of the problem that these children faced.

Societal Changes

Brief summaries of three types of changes in our societal context represent samples of the myriad differences between the world of school-aged children in the 1980's and the way it was in the '50s. These are changes in the family, changing roles of women, and new social problems affecting children. The discussion is not intended to be comprehensive; it simply sketches some of the context of reality which provides the background for teachers working with children today.

Demographic changes: The family. Demographic studies indicate that single-parent households with children like Scott are rapidly becoming the rule rather than the exception. According to Coates (1980):

> The traditional image of the family--mother, father, and children around which public policy has been framed--is increasingly at odds with reality. The growth of the single-parent family is one of the major demographic trends affecting schools. Approximately 45% of children born in 1976 will have lived with a single parent for some time before reaching 18 years of age. Between 1970 and 1976, the number of children living with a divorced mother increased by about 40%. The number of female-headed families with children has increased by over 250% since 1950. These families comprise 41% of all poverty-level families; the limited income of these families creates new demands and stresses on all public services, including schools (p. 293).

Wegmann (1980) indicates that between 1970 and 1977, the population of children under 18 who lived with both parents decreased from 89 to 85% for whites and from 58 to 47% for blacks.

If households in general are considered, the trends are even more pronounced. The "family," which has been perceived as the basic unit of society, is no longer representative of the way in which most Americans live. If a "family" is a mother, father, and young children living together, then predictions indicate that less than one-third of all American households will consist of traditional "families" by the end of the 1980s. This is in sharp contrast to the situation in 1960, when 55% of all households had a mother, father, and at least one child under 15. Birth rate decline, divorce increase, and the shrinking number of one-worker households (43% in 1960 to a predicted 14% in 1990) account for the changes (Ziemba, 1980).

Many other stereotypes are no longer necessarily true of American families Three of them are as follows: (1) that they live in one place for a long period of time (16-18% of the population moving annually, according to Coates, 1980); (2) that parents work in the daytime and sleep at night [Sanders (1980) describes the plight of increasing numbers of "night children" who are alone at night because their parents or guardians work the night shift.]; and (3) that one or both parents work (Unemployment for spring 1980, was an estimated 7% and increasing.). These kinds of realities have obviously changed the lives of the children whose families are affected by them.

The increased number of children placed in foster homes is an added problem. In the middle 1970s. there were between 350,000 to 500,000 children taken from their homes by social agencies. Some had been abandoned; others were taken away because of child abuse. Most of these children move from one foster home to another, sometimes while awaiting adoption. Many of them ultimately end up in adult prison population (Bartlett, 1980).

In a newspaper account of the Harvard study on changes in the nuclear family, the Lexington Herald Leader (1980b) indicated that the general public's lack of a reality base about what is happening to families may be part of the problem. They suggest that new family policies may be necessary, but that Americans are clinging to traditional ideas about the family, that middle-aged people who do not approve of the present situation are in policy-making positions, and that there is a "lack of understanding of what is happening--and why."

The reality of the incident with Scott helped me to read newspaper descriptions of changes in the family with greater comprehension. The data on demographic changes continued to be reported, but I was able to read and interpret it with a new sensitivity to its meaning for children and for teachers.

Changing Roles of Women. Unquestionably, the economic situation, with the resultant need for more women to work outside the home is a current reality. Americans have found that it is increasingly more difficult to make it on one income. Gappert (1980) points out that "post-affluence" is a characteristic of the economy for the next quarter century:

> In 1973-1975, the expectations of the American middle class were shattered. Within those two years, the purchasing power of the dollar shrank by nearly 20 percent, the value of household savings and other wealth and assets declined about 12 percent, and the size of household debts rose by over 18 percent (p. 250).

Gappert (1980) cites a Business Week article which indicates that the value of net financial assets for all American households at the end of 1974 had declined to 64% of their value at the beginning of 1973. He further points out that the average real take-home pay of manufacturing workers with three dependents has risen less than 1.3% per year during the past decade--the annual gain being about $5.66 per week, with nearly $4.00 of this gain absorbed by tax increases.

It is no wonder that the percentage of women in the labor force has grown from 37% in 1962 to 48% in 1977. Projections indicate that it may increase to 60 to 70% by 1990 (Wegmann, 1980).

Another factor in changing family patterns may be that women are finding the homemaker role less fulfilling now than they did in past decades. Johnson (1980) adds that women who marry, raise families, and still have careers are often faced with the pressure to be "superwomen" who can fill both the traditional and more contemporary roles simultaneously. Erica Jong (1979) laments this conflict in her poem "Woman Enough":

> I wish there were not a choice;
> I wish I could be two women.
> I wish the days could be longer.
> But they are short.
> So I write while
> the dust piles up.

Thousands of mothers of "Scotts" (myself included) are now "writing"--or teaching or selling or managing or typing--"while the dust piles up," and children come home to empty houses. Our deep regret is that there are presently few alternatives either for dusting or for child care. But, that too is reality. Perhaps, as Gappert (1980) indicates, we live in a "post-macho" society. Ultimately, acceptance of equality for females, deemphasis on physical strength, a decline in the "military mentality" of leadership, and increased acceptability of creativity and sensitivity in males may come to be viewed as positive societal trends. But, for the present, both men and women are caught in the dilemmas of a transition period in which thousands of "Scotts" are the innocent victims.

New Social Pressures on Children. Children of the '80s are also increasingly the victims of societal problems that were once primarily those of the adult population--pregnancy, drug abuse, depression, crime, cynicism, severe value conflicts. One census statistic supporting this premise is that in an era of declining population, the only age group in which birthrates are expanding is females under 15 years of age (Wegmann, 1980).

Furthermore, in cities like New York, the rate of juvenile crime is alarming; there are increasing numbers of shootings, stabbings, beatings, burnings. Often juveniles brutalize other juveniles. (Almost 41% of the victims in New York state were aged 13 to 19.) Add to this the reality of narcotics and truancy, and you see some of the problems' magnitude. Nor is New York unique. In a relatively safe, quiet place like Kentucky, almost

50,000 juveniles (17 and younger) were arrested in 1977 and again in 1978. In one city alone, Lexington, 218 children *under 10* were arrested for serious offenses (murder, rape, aggravated assault, auto theft) in 1977 and another 238 *under 10* in 1978 (Lexington Herald-Leader, 1980a).

At the same time that our children's world is becoming more brutally real, it is also taking on an added element of fantasy and science fiction, overlaid with important value questions.

The impact of television, enabling today's students to view, almost as participants, the exploration of the moon and the wars in Asia, may be greater than anticipated. In addition, children who come to the classroom from a pre-school TV-dominated world may be confused when teachers ask them to listen and respond. They may be accustomed to learning spiced with entertainment and feel that the classroom is incredibly dull (Pulliam et al 1980). Our children's TV-dominated world bombards them with continuous unreality. Today's society poses some provocative conflicts. The appropriate questions may no longer be *can* we replace defective organs, colonize outer space, modify weather, utilize nuclear power, but *should* we (Iozzi, 1980). These are heavy questions inescapably imposed on all of us, including the young.

It is not surprising that childhood depression is increasing in school-aged students. Sometimes expressed as crying, withdrawal, hypersensitivity, or excessive self-criticism, and other times hidden as aggression, it affects more children than previously suspected (Gunnerson, 1980).

Like the changes in family structure, and roles of women, the new societal problems intensify the instructional and management difficulties of teachers in today's classrooms. Anyone who returns to the classroom today after an absence of even five years needs to understand that the world of children is not the same as it used to be, and that the methods and curricula designed for "average" children from stable, middle-class, two-parent families may be entirely inappropriate for most students in the 1980s.

Cultural Changes: The Multi-cultural Society

When I was student-teaching 25 years ago, I was required to develop a social studies unit that emphasized the concept of America as the great "melting pot," a unicultural society to which people from many other cultures contributed and in which they all enjoyed equal benefits. One of the ironies, neglected by neophyte teachers, was the fact that this curriculum was presented in schools which were still highly segregated and which excluded (by permission of law) most of the population of handicapped children. Today, while the student population represents a wide range of diversity, teachers have not been prepared adequately to deal with such differences.

The idea of "melting pot" has given way to an equally lofty concept called a "multi-cultural" society, one in which differences are celebrated rather than minimized. Many school curricula now include, for example, Afro-American studies and bilingual programs. These kinds of programs have been introduced, and this new concept is being verbalized. Yet, as before, the average elementary teacher still seems unprepared either to accept this concept or to teach children to value the diversity which is present.

The mere existence of diverse groups in the school population may intensify management problems for teachers. Broudy (1980) suggests that public schools in the coming decades will be faced with the increasing fragmentation of a series of small "publics"--advocacy groups for various subcultures and/or special interests. He indicates:

> Trying to adapt to a multiplicity of constituencies that share no unified goal, set of values, or a common vision of the good life, may be more than the present system can survive (p. 373).

Simple placement of children from diverse backgrounds into common classroom groupings is not the answer. Howe (1980) cautions that, in the case of racial segregation, the mere bringing together of school children cannot solve problems rooted in over a hundred years of discrimination. He believes that many of the forces which produce racial isolation are often out of the control of schools, yet schools are implementing programs intended to solve these problems. Wegmann (1980) sees that problems inherent in a socio-economic and racially isolated environment may increase as the products of these superficially desegregated public schools go on to colleges and professional jobs. The school-based problems are stated by Goodman (1980):

> But all that opening the doors meant was that many pupils were admitted to classrooms not prepared for their coming. The curriculum methods, materials, and teachers were largely not open to the differences in language, culture, values, and experience represented by their new pupils. That led to frustration and disillusionment for pupils, for teachers, for parents (p. 40).

What then is needed? Goodman (1980) suggests:

> A key tenet of the neo-progressive movement must be accepting cultural and linguistic difference and treating it as strength rather than weakness (p. 471).

Tonemah (1980) urges that, for Indian children, schools should suit the "basics" to goals and objectives identified by them. Ashton (1980) cautions that ability grouping is a widely used practice which supports unequal status. She cites the National Education Association (NEA) statement on the "humane school" as an exemplar:

> . . . one that celebrates personal differences and, also emphasizes human commonalities; helps the student to understand his antecedents, to grow from them, and finally, to not be restricted by them; encourages superior scholarship which allows the inquirer to contribute to his society and to strengthen his own personality;

> provides the resources for the individual to examine his own life so that he can enlarge his maturity and help to cause growth in others (p. 20).

As it relates to the issue of "mainstreaming" handicapped children, the population is different but the problem is the same. Mere platitudes about equality and the value of diversity will not suffice. Research indicates that children are aware of handicapping conditions by age four, that older children are less accepting of handicaps than younger, and that exposure alone does not increase acceptance. Carefully designed instructional programs, however, can help both prospective teachers and children in classrooms to develop positive attitudes towards handicapped children (Morsink, 1980a).

Yet the solution to the problem is not simple. Sims (1980, p. 36) puts it into historical perspective by suggesting that some difficulties of integrating handicapped and culturally different students into the education mainstream stem from three Western European ideas: "(1) a disposition to regard anything short of perfection as unacceptable; (2) an intense emphasis on respect for authority, obedience to family and loyalty to God; (3) a perception that those who are culturally and racially different are inferior." Sims suggests that recent changes in America imply a need for changes in the preparation of teachers:

> Everything in America has changed but teachers; students, the family, the society, the community, and the world are different. The same methods, techniques and emphasis in teacher education that were used in the past are less effective for the present and may prove disastrous in the future (p. 44).

Sims concludes:

> Teacher education programs must, if public school education is to meet the needs of students in the 1980s, prepare teachers for schools where all ethnic groups and all classifications of students will be present, and where all services and facilities will be available on an equal basis to all students. New teachers must be taught that all students must have equality of opportunity, that isolation is impossible in this interwoven, interrelated society (p. 45).

Contemporary Pressures Facing Schools

Although there are a number of contemporary pressures facing public schools, only two will be presented briefly here--the shrinking financial base and the press for accountability.

The lack of adequate financial support is a major problem for schools in the '80s. Demographic studies presented earlier in this chapter indicate that the population is getting older, and that fewer families are having children. Candoli (1980) suggests that these population changes mean the majority of people have no direct affiliation with public schools and resist expenditures. He cites as influential factors the shift in population power base from city to suburbs, anti-tax groups, the recessional inflation, and the difficulty of implementing federal laws.

Dede (1980) suggests that public education will experience even more severe cutbacks as a result of contemporary economic problems:

> . . . formal education will experience very severe financial strains in the next decade because of the simultaneous impact of a number of trends. First, we seem to be approaching the maximum percentage of their income that people are willing to spend for education (currently about 8½ to 9% of GNP). Over time, the 'piece of pie' that we've been able to claim from people's income has crept up and up--but now clients are saying, "no more." The reason that our share of the fiscal 'pie' has continuously increased has not been because we've been particularly wasteful with money, but because education is labor-intensive rather than capital-intensive (that is, we use people to produce educational outcomes instead of using machines), . . . Over time, capital-intensive industries cost consumers progressively less, relative to labor-intensive, because salaries rise faster than capital costs. [For example, from 1965 to 1975 the Consumer Price Index rose 69%; educational costs rose 155%.] (p. 33).

Both inner city and rural schools are experiencing extreme financial problems. Jones (1980) expresses a concern that public education can survive only if urban education survives. If flight to the suburbs and pressure for tuition tax credit and vouchers increases, he believes the public schools may not survive. Parks (1980) points out that 18 states in the last census count were at least 40% rural in population, that one rural school-aged child in every 20 is poor, that the median rural income in 1975 was $11,600 compared to $14,910 in metropolitan America, and that rural minorities face the most severe economic/employment problems in the nation. These conditions suggest extreme financial needs, but there is an inadequate base from which to provide resources.

Demographic-related financial problems are present even in relatively affluent medium-sized school districts, such as the one in Kentucky where I taught. During my spring term, the local paper announced that 103 teachers would be laid off the next year due to a decline in school enrollment of 4,000 over the past decade. Teachers were asked to indicate which, if any, of the programs they favored cutting if cuts became necessary--athletics, music, libraries, counseling, art, teaching supplies, adult education, social workers, transportation. The choices were difficult.

During the summer of that year, the situation became more serious. Due to unemployment and a reduction in income taxes collected (among other things), there was a shortfall in the state's general fund used to help support its educational institutions. The largest state university, for example, had $11 million cut from its annual budget. The bad news had not yet been given to the local education agencies, as precise amounts of the local district cuts were still to be determined. It was all part of the general pattern of declining support for public education, a serious problem in the 1980s.

At the same time, schools are asked to be increasingly accountable for students' academic performance. The movement for minimum competency testing is a part of this trend. Declining scores served as the impetus for minimum competency. One of the areas of greatest concern is that of mathematical applications. According to National Assessment of Educational Progress (NAEP) results from a Fayette County Public Schools Newsletter (1980):

> The assessment indicates that students do not "think through" word problems:
> --On a simple multiplication word problem, 54% at age 9, 88% at age 13 and 94% at age 17 answered correctly. However, on another simple multiplication problem that included extra information not needed to solve the problem, only 56% of the 13-year-olds answered correctly. 23% multiplied all the numbers shown in the problem.
> --Only 12% of the 13-year-olds and 42% of the 17-year-olds could successfully figure the area of a square when the length of one side is given.
> --Forty percent of the 9-year-olds and 69% of the 13-year-olds could calculate the "distance around" a pictured rectangle with two dimensions given. But only 9% of 9-year-olds and 31% at age 13 could determine how much fencing is needed to go around a rectangular garden when the garden is not pictured. (The same numbers are used in each problem.)
> --Thirteen-year-olds were asked how many cars, each holding a certain number of passengers, are needed to transport a group of people. About 20% correctly round their answers up to the next whole number, but nearly 40% gave the exact answer to the division, forgetting that their answers mean a fraction of a car.

The press for accountability, however, may be a simplistic response to a complex problem. Though aimed at improvement of instruction, the end result of competency testing may be to force lower achievers to drop out of school (Farr, 1980). In addition, it may represent still another unrealistic expectation imposed on public education, which is increasingly asked to cure all of society's ills--to report child abuse, to administer immunizations, to provide breakfast and lunch. . . (Yaffee, 1980).

Tyler (1980) urges that we consider also some of the public school's successes, as indicated by the results of the assessment of educational progress:

> Our confidence in public education should be viewed in an historical and an international perspective. At the time of the signing of the Declaration of Independence, only 15% of our adult population

was literate. By World War I, that percent has risen to 35 percent, and by World War II, to 55 percent. In 1979, 80-82 percent of the 17-year-olds who took the National Assessment of Educational Progress had attained basic literacy (p. 152).

The press for accountability is part of the context for reality in contemporary public schools, however, no matter how simplistic it may appear. It, like the increasing budgetary constraints, is a fact of the educator's life which needs to be recognized.

Changes in the American Teacher

In many ways, being an elementary classroom teacher in the 1980s is just about the same as it was in the 1950s. Most are women. Most are still underpaid and overworked. Teachers are still inadequately trained and inappropriately "inserviced," still operating in an isolated, rather than a collaborative mode, with each one behind closed classroom doors doing his/her thing. Teachers continue to be denied the respect and status granted to others who are considered "professionals."

In other ways, however, being a classroom teacher now is quite different from what it was 25 years ago. The job is much more difficult. The rate of technological advance and knowledge production is so rapid that it is impossible to remain current in even one specialty field. Societal expectations for the public schools are so great, and legislative mandates so numerous, that a sense of failure is inevitable. Teachers, who have become focal points for society's frustration over public education, are subjected to physical violence and verbal abuse. Because jobs are scarce and economic pressures great, many more teachers now are married (or divorced), with home/family responsibilities in addition to their teaching jobs, and they feel overwhelmed by conflicting demands. Most teachers today have found it necessary to join teachers' organizations which can represent them in their striving for self-governance, improved working conditions, adequate preparation, and professional standards. The movement towards an organized profession has been essential but is unfortunately often misunderstood as hostile and militant.

What is the contemporary teacher like? Lortie (1975) has studied teachers extensively. He reports that elementary and secondary teachers constitute one-fourth of the nation's public servants--2,000,000 persons. He indicates that there are a number of factors which attract people to teaching, including contact with young people and opportunity to render a needed service. Lortie reports that others entered teaching because they liked school themselves, or for material benefits, time compatibility, social mobility, or job security. For others, there were economic constraints--not enough money to continue schooling. One-third of those who entered teaching actually wanted another career.

Lortie also reports that teachers average 47.4 hours of work weekly, with secondary teachers more, and single women the most time devoted to the jobs. He indicates that 9 out of 10 respondents to a recent NEA survey said teaching made more demands on their time and energies than they expected. Respondents to the same survey reported that their training was unrealistic, and discipline harder to achieve than anticipated. Fifty-two percent said they received too little preparation in classroom management and discipline.

Undeniably, today's teachers face incredible problems--stress, too many students, too much paperwork, administrative hassle, student assault, burnout, and salaries for teachers are still appallingly low. "The estimated average salary of elementary school teachers is $15,661, and of high school teachers, $16,387, for nine months' work. The average yearly pay of a plumber is about $19,700; for a government clerk it is approximately $15,000" (TIME, 1980, p. 55). Although it might seem possible for teachers to supplement their salaries with summer work, this is often unrealistic. Summer jobs are hard to find, and many teachers must spend their summers attending college.

As salaries remain low and opportunities for bright women expand to other professions, it may be that those entering teaching have lower skill levels. Potentially, this is a serious problem for the future. In many cases the performance of teachers on tests of basic skills is already poor , so that at least 12 states have now implemented tests of competency for teacher certification (TIME, June 16, 1980). (The number in October 1980 had risen to 23.) Lyons (1980) asserts that "teachers can't teach . . . because they don't know anything" (p. 123).

The Plunge into Reality

As a representative of the teacher education community, I entered the world of teachers in schools, many of whom shared Lyon's (1980) view that preservice teacher preparation teacher education "is a massive fraud. It drives out dedicated people, rewards incompetence, and wastes millions of dollars. Our taxes pay for it all, but our children pay the real price" (p. 108).

As an advocate of mainstreaming, I entered the world of the classroom, a world in which many of my colleagues also shared the views of Detroit Counselor Jeanne Latcham (quoted in TIME, June 16, 1980).

> Mainstreaming is ludicrous. We have children whose needs are complicated: a child in the third grade who has already been in 16 schools, children who need love and attention and disrupt the classroom to get it. Ten percent of the students in Detroit's classrooms can't conform and can't learn. These children need a disproportionate amount of the teacher's time. It's a nightmare--she can't help them, but she never forgets them (p. 60).

I stepped into a different world, one in which there were incredible changes in society as a whole, and schools in particular--painful realities about the family, the roles of women, the pressures on children; the quest for multi-culturalism; the press for accountability in an era of budgetary constraints; the expectation that teachers in schools could solve all of the problems if only they tried harder.

As a regular (not even "special") teacher, I felt that I was low on the totem pole. Unlike the professor, I had no title; unlike the administrator, no power; unlike the doctor, no respect. I felt this culture shock acutely as I stepped down from the tower to the classroom, leaving my doctorate and my credibility behind to plunge into the reality of teaching 24 third-graders, five to ten of whom were mildly handicapped--and "mainstreamed."

Chapter Two

TEACHING CHILDREN TO VALUE DIVERSITY

> Teachers should be skilled in assisting others (parents, colleagues, pupils) in understanding and accepting as positive values the increasing diversity of students who are enrolled in regular school programs (Reynolds, 1980, pp. 16-17).

Statement of the Problem

There is presently a discrepancy in many teacher education programs between the preparation provided for dealing with diversity and the competencies needed to handle the realities of increasingly diverse classrooms. Part of the problem may be rooted in the "set" for homogeneity that seems to be presented to preservice elementary teachers. "Normal growth and development," "the average student," "the norm," "standard deviations from the mean"--these terms are representative of the vocabulary introduced as part of the professional culture. Most preservice courses are offered for "regular" teachers and stress methods for teaching the "middle range" of students; many professors indicate that this is indeed the focus of their content. Courses that emphasize the needs of diverse populations usually have special titles--"The Exceptional Learner," "The Gifted Student," "The Culturally Different Child," "Teaching the Bilingual Student," in the extreme, "Abnormal Psychology"--and are often found in different departments or colleges. The end result seems to be that many elementary teachers have completed certification programs and entered the profession believing that they are responsible only for docile, non-handicapped white middle class children who have "average" intelligence, even though that viewpoint has become archaic as a result of legislative mandates and demographic changes in American society.

It may be that the discrepancy between the expectation and the reality creates a sense of shock which makes it difficult for beginning teachers to assimilate "diversity" as a positive value. It is also probable that most teachers lack essential knowledge about diversity and therefore are unable to teach children to value it. The case of Charles, which follows, illustrates the need for the teacher to model acceptance of diversity and to understand its dimensions in order to transmit this value to children. It also illustrates the need for the teacher to distinguish between diversity and deviance

A distinction is made between diversity and deviance. Diversity, a value to be prized and taught, means simply that people differ in customs, background, and abilities. Deviance, simply stated as inappropriate behaviors in particular places such as school, is to be understood and accepted, but not reinforced; deviant behaviors need to be changed.

A Case Study: Charles

Charles had been classified as mentally retarded and was in a special education class before his part-time placement in my mainstream classroom. His learning needs were diverse and his behavior deviant. It was essential to change his inappropriate behavior before the other children could accept his diversity.

At the start of third grade, Charles was 10 among a class of 8-year-olds. According to standardized individual tests of language and intelligence, he functioned as a 4- or 5-year-old. His language and math skills were severely limited. He did not follow oral instructions, his sentence patterns were immature ("I go school." "Not want do that." "Show class what I do."), his articulation was so poor that his speech was almost incoherent, he could recognize few letters of the alphabet, and he could not add or subtract numbers up to 10. Also, Charles' attention span was about five minutes.

Socially, Charles' behavior deviated from the class norm. His vocabulary was rich in four-letter words, which he used often, loudly, and indiscriminately. He took and kept things he liked and screamed obscenities if the owner tried to take them back. He interacted with other children by hitting them, grabbing their possessions or calling them names, then running away. He tore up his papers, even those completed correctly, and refused to take them home. He scrawled all over his books.

In early February, Charles was placed in my classroom for 15 to 30 minutes per day. By mid-February he was assigned to my room before school, for 45 minutes in the morning and in the afternoon, and for physical education, music, lunch, recess, and special programs. He received academic instruction in the resource room for educable mentally handicapped children, and he attended speech therapy twice a week.

On his first day, I told the children, "I like Charles and I hope you all like him too. There are some things that are hard for Charles to do and I'm going to help him. I'll tell him when he does good things. I want you to help by ignoring him when he does bad things. Sometimes he might get mad at me. That's okay--I'll ignore it and I want you to try to ignore it too." Sometimes it was hard to ignore Charles--especially when he slammed the door so hard it made your hair stand on end or used his favorite four-letter words.

Illustrative Classroom Practices

The following section presents a brief description of some of the techniques used in this classroom to help the children accept and value Charles, as well as others with diverse needs and behaviors. In addition, a list of resources (media and materials) for classroom use is found in the appendix. And, of course, some of the other techniques described in the chapter on individualizing instruction (such as peer tutoring) also had the effect of enhancing the "value of diversity" concept.

The practices actually implemented in the mainstream classroom for the purpose of "teaching children to value diversity" will be summarized below. These practices have been grouped into five categories: (1) direct instruction on accepting differences, (2) public recognition of achievements, (3) student participation in classroom decisions, (4) integration of "value of diversity" concept into academic areas, and (5) teacher modelling of value of diversity.

Direct Instruction on Accepting Differences. Early in the semester the children were included in the Green Circle Program (Gitomer, 1979), a presentation made to each classroom in our school by volunteers from the National Conference of Christians and Jews. It is, initially, a flannelboard presentation in which children are shown expanding circles which include themselves, their family and friends, and all of their "neighbors" throughout the world. The emphasis is on brotherhood, acceptance of others regardless of differences, and an understanding of how it feels to be left out of someone's "circle." The children also sing the "Green Circle Song":

Circle Green, Circle Green,
Finest Circle we have seen,
The greatest task that we know,
Is to make the circle grow.

Smallest one circles me,
Then we add the family,
Friends will make it larger still,
Further we must spread good will. (Gitomer, 1979)

After this program the children drew bulletin board pictures of their own "green circles" and engaged in a number of other instructional activities which emphasized self-concept development, understanding of others, and acceptance of differences. These are described in detail in the Follow-up Activities Book which accompanies the program.

Our classroom was selected, just by chance, to be videotaped for the local news while participating in the Green Circle demonstration. We were also fortunate to have an autoharp, on loan to us by the school's music teacher, which I could use to accompany the Green Circle Song. Since it was close to Valentine's Day, we had already learned the Tom T. Hall song, "I love . . ." in which the last line in every verse ends with "and I love you, too." I sang the song to the children, inserting the name of each child as s/he was called up to the circle for the program. From that day on, our "circle" took on great importance; we had a circle at the end of every day, sitting together on the floor to sing, hear stories or poems, recognize children who had done good work, and to make group decisions of importance to the classroom.

The bulletin board which was constructed following the Green Circle Program was entitled, "All Kinds of People." It featured pictures captioned "What I'm Good At," and pictures of families (pictures of one-and two-adult families in many different kinds of homes). There was also a section entitled

"Many Ways to Talk," in which the visible alphabet, a braille weekly reader, and Spanish words for the numbers one to ten were displayed. Discussion of pictures chosen for this bulletin board took place in our special circle each day.

There was also some direct explanation to the class about the nature of Charles' diversity and the classroom modifications it required. I attempted to do this, however, in such a way that it minimized any possible inferences that Charleswas "bad" or "stupid" or "inferior"; his differences were portrayed as similar to those we had in common.

When he first joined our class, his desk was placed behind a folding screen to shield him from distractions. We called it his private office. It was near a large table on which he kept his box of papers and "work" to do. The other children were told, "Charles is going to be working in our room sometimes. This private office will be his desk when he's here. When he's not here, other people may use the office. Sometimes I'll put special things there for you to look at. Other times you can go there when you want a place to work all by yourself."

At first they groaned when they heard Charles was going to be in their class; but they enjoyed their turns at the first activity in his "office." It was Dental Health Week, and they were allowed to examine two eggs covered with vinegar, one which had been treated with flouride. They were also allowed to look at a little jar filled with old clean and sterilized teeth, and donated by a dentist, and to sort them into piles by cut, grind, and tear function. "Charles is new in our class today," I said. "He needs some friends to help him feel welcome. I'll be looking for friends who say or do nice things for him. Those people will have the first turns to go into our special office and look at the teeth."

Lots of pupils were nice to Charles that day. I made sure that everyone was quiet and busy whenever he came into the room, and that he knew what to do when he entered. His work consisted of matching four block designs (Developmental Learning Materials, 1980) and completing five Frostig Visual-motor worksheets (Frostig & Horne, 1964). He, too, could examine the teeth but only after he had finished his work.

Public Recognition of Achievements. During our Circle time, I recognized any child who had done something special that day. In most cases this was a simple verbal statement. "Look at Paul's handwriting paper; he made all of his m's perfectly today." "Susan wrote a beautiful poem that I'd like to read to you." "Charles handed in all of his work on time today; you worked hard, Charles!" "Marlene did something really nice at lunchtime. She saw Betty Jo accidentally spill her milk, and she helped clean it up. That was very considerate, Marlene." The children began to applaud for each other, spontaneously, when anyone was recognized. They were also given a chance to tell something special about a classmate, and when this happened, both the "teller" and the friend were complimented.

Sometimes their recognition in the circle was paired with a more tangible reward. For example, some children won pencils for getting all "E's" in writing for a whole week; others were awarded paper ribbons for mastery of one of the multiplication tables; still others won a tiny paper flag for a deed of good citizenship; and others won paper stickers for outstanding social studies projects.

Sometimes recognition was given immediately, instead of at the end of the day during circle time. This was more often true for a handicapped child who could not wait for reinforcement, such as Charles. "Charles has been working quietly at his desk for five whole minutes; I want you all to see the math problems he's finished!" Charles would be patted on the shoulder as I held up his paper; the other children, again spontaneously, would applaud. He enjoyed this recognition so much that he often asked me to "show class what I do."

When Charles reached the point where he could sit in a reqular desk and work without being totally distracted, I took down his "office" (telling him how proud.I was of his progress) and let him sit with the group.

This account may make it sound as if I were able to be totally positive with Charles, or that his progress was always smooth. My daily logs will document that this was not true, as indicated in the following excerpt:

> It was also necessary to hold Charles accountable for his inappropriate behavior. The problem was that finishing his work hadn't prevented Charles from fighting. When this became apparent, Charles was told that he had to earn all of his recess time. He could earn 5 minutes of recess time for each 15 minutes of classroom time he did not fight with anyone (if no fights from 8:00 to 8:15 = 5 minutes recess, etc.). If Charles had a fight at 8:14, he didn't earn his first 5 minutes, but would have another chance at 8:16 to 8:30 and so on. This resulted in Charles' incidents of fighting being reduced to 3 times a day by March 12, and 0 to 1 thereafter.

With Charles, progress was never even. Some days he was totally unmanageable. I could usually predict that if he entered the classroom, slammed the door, and cursed, that it was going to be tough. Once, he pushed over his desk, tore up his papers, and started to run around the room. Another time he was so determined to fight that I had to restrain him physically by holding tightly to his arms.

When I had a substitute, Charles went absolutely wild. One substitute's note to me is self-explanatory:

> Mrs. Morsink,
>
> I tried to do most of the things you asked. I did not tape the lessons because it was time to begin reading groups when Charles left and the class settled down.

> I could write pages about Charles' behavior. Instead, I will just say briefly that he did not work well for me. He completely destroyed all his papers before I could explain them, and disrupted the class with "strange noises" during our test.

The day I came back, after those two awful days with a substitute, Charles was an angel. He came right in from the bus, sat down, and began to work even before the bell rang. I praised him publicly and gave him a Snoopy sticker. He did not hit, curse, yell, or argue all day. As the day went on the children got increasingly excited about his good behavior and cheered him on. He finished all of his work, came and went to his special classes without incident. He behaved so well that the other pupils, in our circle at the day's end, voted to give him special recognition--the right to sit on the handmade latchhook rug we had made for the Arts and Crafts Fair. One person got this privilege each day, but usually the person's name was drawn from a box which contained the names of all those who had been designated "superstars." One of the girls explained that they voted for Charles because "if he just got his name in the box, he might not get picked," and they wanted him to win.

Student Participation in Classroom Decisions. In this classroom the children were allowed to have a voice in some of the classroom decisions. This, I believe, communicated to each of them that all were important members of the group, and that the students, not just the teachers, had both rights and responsibilities in the classroom society.

The children participated, for example, in the formulation of rules for the classroom. They decided to (1) respect the flag, (2) keep the room clean, (3) be friendly, (4) help others, (5) in fire alarm, walk calmly, (6) if someone fails, be a friend, (7) obey teachers, (8) respect others.

They also designed a system for controlling movement in and out of the classroom, after I had given them some limits within which to work. They discussed several ideas, voted on them, and designated a committee to work out the details. I monitored the system, but they had freedom, within limits, to come and go. I believe that this system communicated that each of them was trustworthy and capable of some self-determination.

We also had a system in which children who engaged in arguments were asked to go to a private corner and "settle" their problem. (Settling is a technique used by Loretta Locher, the master teacher in Kalamazoo, Michigan, under whom I student-taught in 1956.) They had to agree on a solution fair to all, rather than relying on the teacher. Even Charles participated in this system on occasion.

The all-school Arts and Crafts Fair gave students another opportunity to participate in decision-making. They decided that we should make tin-can pencil holders and latchhook coasters for sale at the fair. They also decided how much we should charge for our items, and how we should spend our profits. We earned over $13.00, enough to finance an end-of-year party and to purchase clay for a special art project.

The students also participated in some decisions about what they personally wanted or liked to do. Each child's diversity, in terms of preferences, was recognized privately in a questionnaire which they completed at the beginning of the semester and again at the end. I asked each question orally, and the children answered by writing simply Y/N (yes or no) or printing the first letter of a word which named an academic subject. The questions follow:

1. Do you like most of the things we do in this class? (Y/N)
2. What do you like best? (Name 1-2)
3. What do you not like? (Name 1-2)
4. What are you smart in? (Name 1-2)
5. Do you need help in something? (Name)
6. Is our room quiet enough for you? (Y/N)
7. Is our room interesting enough for you? (Y/N)
8. Do you have enough work to do? (Y/N)
9. Am I mean enough? (Y/N)
10. Do I like you? (Y/N)

Flexible, remedial, and tutorial groups were available to those who needed them throughout the semester. The pre/post comparisons on this questionnaire indicated that many more children were able to acknowledge their own diversity at the end of the semester than at the beginning.

PRE
--Only 3 said they needed help in anything.
--Only 10 said they were "smart" in anything.
--Nobody said he or she was both "smart" and in need of help.

POST
--10 said they needed help in something.
--22 said they were smart in something (or everything).
--10 said they were smart in something and needed help in something else.

This questionnaire also included a "like best/not like" input section. Students could see that their feelings were respected in these areas because changes were made following analysis of the pretest results.

PRE
Best - reading, 8; science, 6
Not like - writing, 6; "afternoon math", 9; language, 7

POST
Best - art, 13; math, 10; special language, 11
Not like - not more than 3 responses in any subject area

I believe that involving every child in the process of group decision-making was a way of stating, nonverbally, that their diversity is not a factor in determining whether they should have the rights and responsibilities of "citizenship." It is a question of equal access to opportunity.

Integrating Value of Diversity Concept Into Academic Subjects. The "value of diversity" concept was integrated naturally and logically into a number of academic subject areas during the course of the semester. The Career Education unit, a part of the district's social studies program, included many activities on understanding of self and others. Most often these were used in group discussion with related follow-up activity in writing or art. In addition, I obtained a series of supplementary filmstrips on careers. They emphasized the variety of jobs available in a particular area (for example, the shopping mall, the airport, and the television studio (Dolgin, 1973). Each filmstrip stressed the dignity, importance, and interrelatedness of every job.

A combined health/science unit called "All About Me" was also utilized. In this unit, students read, learned, and talked about their bodies and how they worked. "Diversity" entered the health/science unit in two ways--through emphasis on the importance of each person's unique body, and through elementary discussion of how the sensory organs work and why, sometimes, they do not work in people with handicaps.

The language arts provided many opportunities to integrate the "value of diversity" concept. Our reading series included some stories about handicapped persons and many stories about children from different cultures. These became the starting points for discussions and for special follow-up projects. The reading group that read about children in Mexico chose to learn to count from 1 to 10 in Spanish; the group finishing a story about Duke Ellington was allowed to listen to a recorded story and songs of Jose Felliciano (Teaching Resources Corporation, 1970); the children who read a poem about special "messages" on the clay pots of Navajo Indians designed their own pottery.

During our circle I read stories about children (Rufus M) or animals (Charlotte's Web; Rabbit Hill) which represented a range of diverse settings and characters. Some of the poems I read also celebrated diversity, such as Elizabeth Coatsworth's "Swift Things Are Beautiful" (1967):

Swift things are beautiful:
Swallows and deer,
And lightning that falls,
Bright-veined and clear,
Rivers and meteors,
Wind in the wheat,
The strong-withered horse,
The runner's sure feet.

And slow things are beautiful:
The closing of day,
The pause of the wave,
That curves downward to spray,
The amber that crumbles,
The opening flower,
And the ox that moves on,
In the quiet of power (p. 101).

Some of the educational television programs we watched also provided opportunities to view and discuss diversity. For example, the "Inside/Out" series (Educational Television, 1979) features many personal problems with which children can identify. We did not watch the series "Feeling Free" since it was billed for an older audience, and the primary level series on handicaps was unfortunately not shown at a time that fitted our schedule. We missed, regrettably, the opportunity to view--live--the taping of the delightful video program, "The Kids on the Block," which features puppets with handicaps. This would have been another excellent discussion-starter.

All these activities were introduced naturally and logically into the curriculum whenever they seemed to "fit." Thus direct instruction on the "value of diversity" was deliberately included in the curriculum.

Teacher as Model Who Values Diversity. I think my own belief in the value of diversity increased the impact of the above instructional activities on the children. The modelling of this belief took many forms. The regular use of individualized teaching techniques and of curricular modifications was a way of communicating that all students' learning needs differed widely, and that these differences were worthy of teacher attention. The positive teacher response to children's accomplishments and to their "good citizenship," rather than teacher criticism of failures, drew the group's attention to each individual's strengths, rather than weaknesses. "Rewarding" every child with verbal praise, hugs, and sometimes more concrete reinforcers such as special privileges or awards helped to create an atmosphere in which each was viewed as capable and as valued.

Both Silberman (1969) and Good and Brophy (1972) have suggested that teachers' attitudes toward children are expressed in their actions and understood by the children in the classroom. Brophy and Good (1970) have tried to identify what teachers did differently for children for whom they had different expectations, and found that they expected more and praised more with children they thought would do well, but accepted poor work from and gave less positive reinforcement to students from whom they did not expect much. It seems significant to note that 100% of the children responded "yes" to question #10 on the questionnaire, discussed previously , which was "Do I like you?" Their efforts seemed to indicate that they believed they were valued by their teacher.

Implications for Teacher Education

Charles' case is a single, and perhaps extreme, example of children's diversity. It illustrates the need for teachers to have a knowledge base about diversity and its implications for classroom practice. Charles is representative of only some aspects of the wide range of diversity (ethnic, cultural, linguistic, handicapping conditions, and so forth) which may be found in a "regular" classroom. Since the increase in diversity has been discussed in chapter one as part of the context for reality, it will not be reiterated here. Three issues, however, will be present briefly: (1) What inferences might be drawn about the factors operating in this particular classroom that might have helped the other students accept and value

Charles?, (2) What is the research base supporting the need for, or nature of the knowledge, skills, and attitudes in this area which seem important for teachers to acquire?, (3) What are some of the areas which the present study and related literature indicate might be important ones for further study?

Effective Practices Used in the Classroom. It would be inaccurate to say that the children "learned to value diversity" as a result of their experiences with Charles. "Diversity" is too abstract for children to "value." They learned to like Charles, who is one of a group classified as "mentally retarded" and who illustrates the range of diversity that exists in public school classrooms. If children learn through direct experiences, then "liking Charles" may be an important beginning in "learning to value diversity."

I believe that the reinforcement programs were important in changing Charles' behavior, and that his behavior change, in turn, helped the other pupils to like him better. I also believe that an initial negative experience with a child labeled mentally retarded might make children less receptive in the future to others with this "diversity label."

Another factor in Charles' acceptance by the class may have been our system of peer tutoring. Charles tutored in how to push somebody on the swings because he did that better than anybody; others tutored him in math. It seems that his participation as tutor and tutee may have shown that he was an individual with both strengths and weaknesses, not weaknesses alone.

It is probable that Charles' academic progress facilitated his acceptance by the group. His progress is credited to the resource teachers who worked with him outside my classroom. His special education teacher taught him to add and subtract numbers up to 10, to print the alphabet, to name colors and read color words, and to identify a few initial consonant sounds. His speech therapist taught him to articulate with reasonable clarity, and to use longer, more complex sentence patterns. It should be emphasized that a classroom teacher could not have given him the intensive one-to-one and small group instruction necessary to meet these academic objectives; his abilities were so different that his lessons would have required a disproportionate amount of class time and might have called undue attention to his difficulties.

Finally, it might be inferred in this case that initial progress in teaching these children to value diversity was a matter of (1) exposing them to diversity , (2) providing them with a teacher who understood individual differences, had accepted diversity as a value, and modeled that acceptance of differences, (3) designing experiences and interactions that provided direct instruction in accepting individual differences, and (4) providing an appropriate support program for children with diverse needs.

Research Base on Diversity. There is a growing body of knowledge about diversity and its effects on children in classrooms. Three anthropological studies, a summary of relevant studies on black children in special classes, and one extended classroom observations are included here as examples. Finally, some of the literature on children's attitudes toward the diversity represented by handicaps is summarized, and its contribution to the knowledge base is suggested.

Anthropological Studies. Warren (1981) has described some of the anthropological studies which provide insight into cultural differences and their resultant conflicts/problems for minority children in traditional classrooms. A portion of his work is summarized here, with permission.

Warren (1981) cites the work of Sindell (1974, pp. 333-341) as an illustration:

> Sindell reports on the schooling experience of Cree (Mistassini) Indian children who move back and forth between home in the summer and residential school the rest of the year. At home they learn behavioral patterns and values which are functional to their later participation as adults in the traditional hunting-trapping life of their parents. School is different. Sindell finds the following contrasts:
>
> 1. The children learn self-reliance and independence at home in their natural surroundings where there are few limits on their behavior. At school they have to learn to be submissive and dependent on others to satisfy almost all (schooling) needs.
>
> 2. Interpersonal relations at home emphasize close emotional ties and interaction with family and kin. In school the children's social ties begin to shift to shallow contracts with a large peer group of the same sex. The number of adults with whom children interact shrinks and they have to become more skilled at attention-seeking behavior.
>
> 3. Most tasks the children learn at home are accomplished cooperatively and contribute to the welfare of the whole group. Competition is the keynote of school life.
>
> 4. Inhibiting overt expression of aggression is highly valued in Cree culture. In school, children learn to express aggression openly (Sindell, 1974, pp. 333-341).
>
> One can rationalize--or even dismiss such findings as irrelevant; i.e., my classroom isn't in a residential school 180 miles northeast of Montreal; I emphasize cooperation, not competition; I don't allow children to be aggressive. But the obvious point is that there are cultural traits, behaviors, and values which are maladaptive to schooling as we generally conceive it and have it organized (Warren, 1981, pp. 163-164).

In another example, Warren (1981) describes the work of Guilmet (1978), who compared verbal and non-verbal behavior in a small group of Navajo Indian children and Caucasian children in Los Angeles. Guilmet (1978) found that the Indian children were less verbal and spent less time talking during independent work periods, but that they spoke to teachers almost as frequently as did the Caucasian children. Guilmet (1979) also studied the instructors' reactions to children's verbal and non-verbal styles, and noted that teachers and aides attended to the Caucasian children more often than to the Navajo children. If Guilmet's description of the Navajo children as teacher-oriented (as opposed to the Caucasian children as peer-oriented) is correct, then a question might be raised about the effects on these children of the teacher's relative lack of attention.

Warren cautions educators to remember that there are individual differences among children within any cultural group, and suggests that teaching strategies cannot be prescriptive according to a "mean" cultural profile. He concludes, "Data on cultural differences are important sources of insight for teachers but their use must be filtered through a continuing process of inquiry in which the teacher comes to understand the schooling needs of each child" (1981, p. 166).

Studies on Black Children in Special Classes. The following section was summarized, with permission, from a manuscript by Hemenway, Middleton, and Pruitt (1981). These authors point out:

> Over the past decade one of the main concerns of mainstreaming programs in public schools has been the mistreatment of the minority child. Earlier experiences involving federally mandated busing and desegregation have shown that efforts at ability grouping or tracking students according to academic performances, has often led to resegregation (p. 49).

Hemenway, et. al., indicate that minorities are frequently overrepresented in special classes for the mentally retarded. They mention culturally biased testing procedures, the effects of stereotyping, and teacher values and attitudes as possible reasons for the overrepresentation.

In reference to the culturally biased testing issue, the authors cite the case of Diana vs. California State Board of Education in which the plaintiffs argued that the IQ tests used to place students in special education programs resulted in a large number of Mexican-American students being labeled retarded. They state that the court ordered the school system to retest students in their primary language and in English, and to re-norm intelligence tests solely on a Mexican-American population sample. Hemenway, et. al., also cite the work of Adler (1973) who states that tests can be biased by being outside of the testees' experiences, and that the language required by the test can be culturally oriented.

Hemenway, Middleton, and Pruitt also suggest that teacher attitudes, stereotypes, and the effects of labeling may be destructive to the minority child's self-concept. They cite a study by Zucher (1979), in which teachers placed larger numbers of fictional students with Mexican-American names in EMR classes than they placed children with similar backgrounds but with Anglo names. They also describe how the "cultural deprivation" stereotype is often blamed for learning problems:

> Silverstein and Krate (1975) point out that for white middle-class children with poor reading achievement, the cause is assumed to be an inappropriate match between curriculum content and developmental level. Sources for poor reading achievement for lower socioeconomic groups are sought in cognitive deficiences connected with the student's background " (p. 54).

Hemenway, Middleton, and Pruitt emphasize the importance of teacher attitudes and expectations:

> Studies have shown that teacher attitudes and expectations of students greatly influence their achievement level. It is essential that teachers of minority mainstreamed children assess their attitudes toward those children and their expectations based on possible negative stereotyping. Re-education is necessary to change attitudes based on differences in physique or skin color from negative acceptance to positive acceptance so that differences are viewed in terms of uniqueness and not as deviant (Johnson, 1976), (p. 55).

They suggest that the curriculum is often not appropriate for minority children:

> As well as not allowing for individual differences, the curriculum is often irrelevant to children of minority cultures. In order to counter this deficiency, the curriculum must include multicultural content. This can be accomplished through accurate reporting of diverse cultural history, availability of literature which contains unbiased representation of minority persons, and an awareness on the teacher's part of the value of contributions by minorites. The most effective approach is an ongoing conclusion of information about minority cultures rather than a once a year unit on "Black Americans" or "American Indians" (pp. 54-55).

They further state that:

> Schools must begin to recognize the deficiencies in a standard curriculum and allow teachers more flexibility in fitting instruction to the needs of the child. The teacher in turn has the responsibility of matching learning tasks to the developmental level, learning style, strengths, and individual needs of the learner (Hemenway, Middleton, and Pruitt, 1981, p. 54).

An Extended Classroom Observation. Cazden (1976), a Harvard professor who spent a year teaching a first, second, and third grade class in San Diego, talked about how this experience heightened her awareness of "the limitations of what we now know." One of her major objectives was to study children's language and to reflect on how knowledge about language helps the classroom teacher. One of her conclusions was that, although such knowledge is often of no help, it might enable teachers to "hear through" what might otherwise be interpreted as an "error." In her words:

> That knowledge reassures, and it lets language forms recede into the transparency that they deserve, enabling us to talk and listen in the classroom as outside, focusing full attention on the children's thoughts and feelings that these forms express (p. 80).

Cazden cites three incidents in which her knowledge about variations in language forms and/or rates of development helped her to respond more appropriately to children. These were the invented English spellings of a bilingual boy who "wrote with a Spanish accent," the Black English that illlustrated powerful learning capacity, and the atypical, overgeneralized responses elicited from children by structured language tests. In each case, Cazden was able, as a result of her knowledge about linguistic diversity,to "listen through" the language rather than overreact to it. Cazden's observations were not unlike the illustrations in the present study which indicate how the teacher's knowledge about Charles' mental and linguistic diversity prevented overreaction.

Changing Attitudes Towards Diversity. The most important aspect of Cazden's school experience (cited above), as it relates to this document, may have been the way in which she modeled for the children her own acceptance of linguistic diversity. She described the way in which she made bilingual word puzzles and posted illustrations with bilingual captions, in addition to asking the Chicano children to teach her Spanish, and she noted the changes in the children's attitudes during the course of the year. For example, a black child who initially put his hands over his ears when he heard Chicano children speak Spanish began to say "Callete" to a noisy neighbor and to ask a Chicano child to teach him to count in Spanish.

Cazden's experience is illustrative of the way in which a teacher can facilitate acceptance of cultural/linguistic diversity. Her techniques were paralleled by those used in the present study to facilitate the acceptance of children with mild handicapping conditions.

Research on changing the attitudes of children and teachers toward the handicapped suggests several interesting things. Children are aware of handicaps by age four, older children are less accepting of handicaps than younger, and exposure alone does not guarantee acceptance. Carefully designed instructional programs, however, can help both prospective teachers and children in classrooms to develop positive attitudes toward handicapped children (see summary in Morsink, 1980).

Issues for Further Study. At least four implications for teacher education programs might be suggested as issues for further study:

1. It will be important to determine how to select teacher candidates who themselves value diversity and who have a desire to work with other professionals in a collaborative mode.
2. Some revisions in the preservice teacher's liberal arts program might be considered. For example, should not the preservice program include instruction in anthrology/sociology/philosophy which enables teachers to understand diversity, as well as to develop a "pedagogical set" for diversity, leading teachers to expect diversity rather than homogeneity as the norm?
3. It may be important to determine whether the master teachers at the public school and university levels to whom the preservice students are exposed can model acceptance of diversity and demonstrate the ability to teach such acceptance to others.
4. It seems that the placement in regular classrooms of children representing diverse backgrounds is a necessary, but not sufficient, condition for teaching children to value diversity. If this is true, do not preservice teachers need to develop skills which enable them to manage classrooms humanely, and to utilize a variety of materials and resources to help children learn to understand individual differences?

It is vitally important that teachers model acceptance of diversity, expect each child to be all he or she can, and then design an educational environment that will enable each child to succeed. The mainstream classroom may, in this sense, be the "least restrictive environment" to enable all children to learn to value diversity.

Chapter Three

MANAGING THE CLASSROOM ENVIRONMENT

> All teachers should be proficient in class management procedures, including applied behavioral analysis, group alerting, guiding transitions, materials arrangements, crisis intervention techniques, and group approaches to creating a positive affective climate (Reynolds, 1980, p. 11).

Statement of the Problem

There is presently a discrepancy between the management procedures normally used by classroom teachers and those which have been found to be most effective in creating a positive climate in which the mildly handicapped child can learn and grow. The elementary classroom environment can be rigid and restrictive. There is often little emphasis placed on preventive discipline techniques. Many teachers respond to misbehavior. In addition, teachers are likely to praise good academic performance, but to ignore good social behavior. This combination of teacher reactions may intensity the behavior problems of mainstreamed mildly handicapped children, which, in turn, can create the feeling that all such children are difficult to manage. When management problems are compounded by cultural or racial differences, teachers may find that they are unable to apply the necessary objectivity to the solution of these problems. These issues are described in more detail in the case study and knowledge base below.

Case Study: Jerry

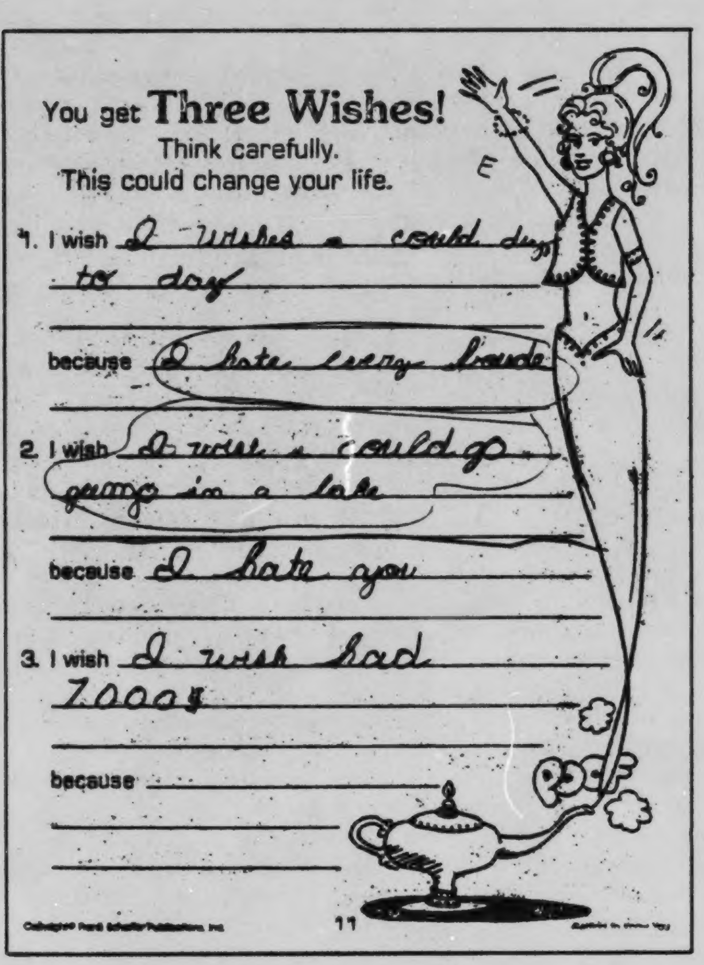
The first thing that should be said about Jerry is that he was completely unpredictable. From one minute to the next, I never knew what he might do. He was the best child in the class. He was the worst child in the class. He was bright. He was slow. He was lovable, considerate, perceptive. He was impossible, selfish, myopic. My daily logs are filled with references to Jerry. My feelings about how the day had gone were more dependent on how I had done with Jerry than how successful I had been with everyone else combined.

If Jerry had been only difficult, it would have been easier to keep him in perspective. But he was obviously bright, sensitive, and hurt. His choice of words describing feelings may suggest something about his self-concept. (See Figure 1.)

Jerry had been referred for testing to determine whether he should be placed in a special program for the learning-disabled, behaviorally disordered, or educable mentally handicapped. He had repeated a grade and had been the concern of every teacher he had ever had. He had missed a lot of school, up to two days each week. My guess was that there had not been many complaints about his absences because it was so peaceful when he was gone.

38

Figure 1



You get **Three Wishes!**
Think carefully.
This could change your life.

E

1. I wish I wishes a could dy to day
because I hate every [illegible]

2. I wish I wish a could go jump in a lake
because I hate you

3. I wish I wish had 7000$
because

11

Jerry was black, and he seemed to anticipate discrimination. His favorite insult word was "nigger," and when he did not get his way, he frequently rationalized out loud that "the honkies always win." He demanded a "100" on every paper, wanted to be first in line, and to sit next to the teacher in every group. He threatened, and sometimes brutalized, other children when they earned a grade or a privilege that he did not earn.

He was a handsome little boy, with an infectious grin and a devilish gleam in his eye. He was loving and lovable, and I think he would have spent the semester sitting on my lap if I had let him. The first day I taught in his class, some of the children said they missed their "old" teacher. (She was young and beautiful--a great teacher, and the children loved her.) Jerry stood up on his chair and shouted, "Ms. Morsink is my teacher and I'm gonna kill anyone who doesn't say so!" Of course, later he told me that he hated me and wanted his real teacher back.

I always felt that Jerry was a really bright underachiever, and objected to the suggestion that his performance was indicative of mild mental retardation. For example, one day we had a science class in which the children experimented with a simple electrical system and a temperature-sensitive color card. Both were to be used for observations on systems and interactions. Jerry was the only one in the class who figured out the two systems could intereact; he shined his light on the color card, and the heat from his bulb made the card change color.

Results of Jerry's educational assessment were given to me in March. He was also scheduled for a psychological assessment, but he was absent on the day the psychologist came to test him, which meant that a placement decision could not be made. A summary of available test results follows.

Assessment Information. Jerry had been referred for assessment by two of his former teachers. On individual achievement tests his overall math score was two years above grade level, while his reading recognition score was one and one-half years below grade level. His spelling score was about one year below grade level with no difference between his ability to spell predictable and unpredictable words. In general information, he scored almost two years below grade level.

The diagnostician noted particular problems with reading words in isolation, recognizing and applying the vowel rules for phonetically regular words and nonsense words. In terms of reading comprehension, Jerry was able to perform better on tests which required him to recognize or select answers than on those in which he had to recall information. Money and word problems were his strongest subskills in math, while addition, subtraction, and division were his weakest. In spelling, his lack of knowledge about common rules (double consonants, dropping final e, etc.) was readily apparent. The diagnostician recommended an individualized program with one-to-one instruction and consistent positive reinforcement. There were several observations that could suggest a learning disability:

--He consistently reversed b/d.
--He confused words with similar configurations (doll/ball, deer/bear, etc.
--His score on a test of auditory conceptualization was notably low (26 points below expected level).
--He tended to respond impulsively without listening to the questions or directions.
--He had difficulty staying on task even in a one-to-one setting with continuous reinforcement.

There were, however, two complications involved in reaching a placement decision on Jerry. (1) On the basis of the diagnostic information, he might just as easily have been classified "behaviorally disordered" as "learning disabled." (2) Because he was a minority group child from a low income family, it would be possible to "explain" his school difficulties on the basis of environmental factors (in an attempt to avoid misplacement in a special class), and in the process to deny him access to essential services. The placement decision had not been made by the end of the semester. Jerry did, however, receive some special help. The nature of this help, the whole-class management plan and Jerry's adapted academic programs are described below, along with the strengths and weaknesses of the methodology.

Illustrative Classroom Practices

Many of the skills summarized in other chapters of this monograph were, in part, classroom management techniques in the sense that their implementation seemed to minimize management problems for the class in general and for Jerry in particular. Since these are described in detail in other chapters, they will not be discussed here. The illustrative classroom practices which follow are samples of those used to create a positive learning environment. They are grouped into four categories--the whole class management system, Jerry's individualized reinforcement program, sample modifications in his academic program, and the assistance provided him by resource persons.

Whole Class Management System. The strategy used was basically positive and preventive, rather than focused on punitive reactions to crises. It is presented candidly, to be criticized by humanists as "too behavioristic," although I believe that helping children to manage their own behavior is a very "humanistic" thing to do. It is also described honestly, open to criticism from behaviorists who will view it "too loose" in terms of its data base and precision. It was not possible, for example, to obtain reliability checks (except in a few instances when children did this for me), and there were a few days during the semester when I was so involved in teaching that I neglected the data collection. I did, however, develop a data-oriented classroom management system which was effective in keeping children on-task at least 80% of the time, and which was realistic to implement in terms of teacher time and effort. This management system, the end product of the whole semester's effort, appears below in final form, described according to the ten steps which a teacher could take to implement it.

Step one: Make decisions on how class should behave. In this case the priorities were:

1. Each child working hard to do his/her best, expressing pride in accomplishments, and trying again when things were hard.

2. Each child expressing "congratulations" to others when they did something well, and being supportive (or at least silent) when another experienced difficulty.

3. Every child attending school every day (except when ill) and all saying they liked being there and believing that their teacher was glad they were there.

4. All of the students demonstrating mastery, by the end of the year, of the learning objectives that were appropriate for their functioning levels.

5. At least 90% of students coming in from out-of-room and from within-room transitions and going directly to their seats to begin work quietly.

6. All of the students "on task" (working quietly on tasks assigned for that time period) at least 80% of the time.

7. Nobody fighting, cursing, crying, calling people names, yelling or running in the halls.

Step two: Determine what turns these kids on ("Turn-ons" are described in more detail in the appendix of the teacher's manual, a related project document.)

1. Find out what constraints are imposed by the system (no corporal punishment or candy in school, for instance) and by the limits of time and money.

2. Find out all you can about the interests and probable motivators for children of similar ages and backgrounds.

3. Ask other teachers what works.

4. Ask the children! Design a simple questionnaire and/or interview each child for five minutes to find out what they like best. (In this case it was individual attention, being first in line, and doing "fun" things in school.")

5. Decide how to use what turns them on to get them to behave in the ways outlined in step one.

Step three: Decide where to start.

In this case it was number five--"At least 90% of students coming in from out-of-room and from within-room transitions and going directly to their seats to begin work quietly." This goal became the first priority in terms of a logical and attainable starting point.

Step four: Design a simple measurement system that will let you know where you are now, how much progress you are making, and when you have arrived at your goal.

In this case the recording sheet was a seating chart on which the teacher could make a check mark in the box (desk) of any child who did not go directly and quietly to his/her seat during the transition periods. It was quick and easy to convert this data to a percentage, indicating what proportion of the students were already doing what was expected. Data collection began with the four transitions per day when students returned from being out of the classroom (starting bell, morning recess, lunch, afternoon recess), then progressed to the within-class transitions, such as reading group changes.

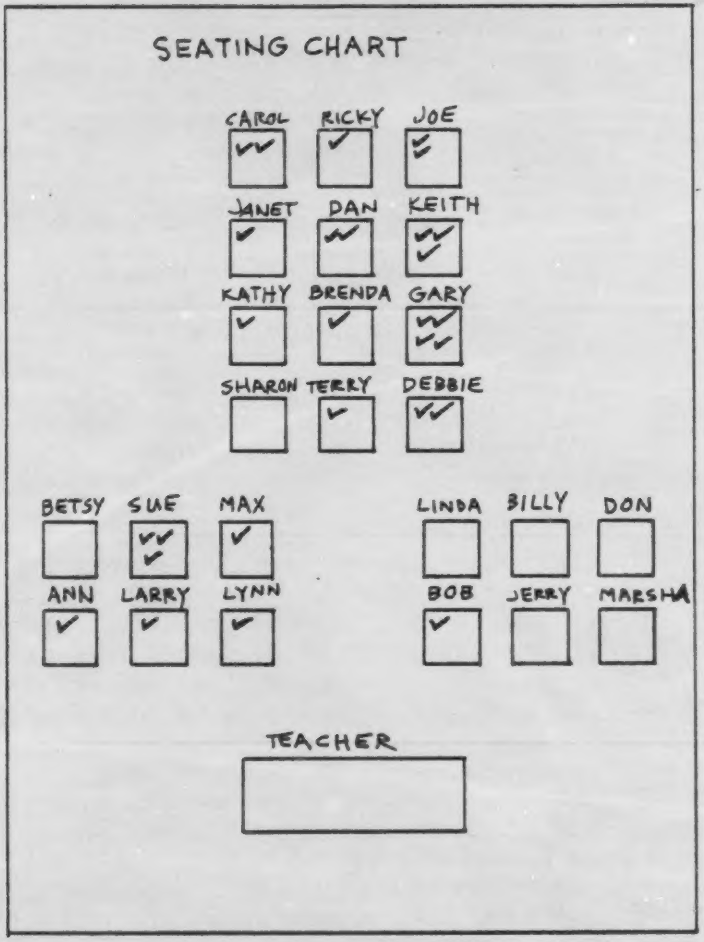
Step five: After you have collected information on where you are now, tell the students what you want them to do and let them know (by actions) how their responses will be rewarded.

Students were told that they should go straight to their seats and sit down quietly when they came back to the room. They were shown the seating chart and told that one of those who did the right thing would be drawn to be first in line the next time the class left the room. The boxes of those doing the wrong thing were checked, but checks were not announced. (See figure 2). Instead, the names of children who did the right thing were announced to the group.

"Sharon, Jerry, Marsha, Don, and Betty Jo came right in and sat down quietly, so I didn't check their boxes. I'll draw one of them to be first in line when we go to lunch." All five names were put into a box, and the one drawn was line leader. The others were directly behind. The line leader was different each time the class left the room, to allow more children to be rewarded more frequently.

When all students were going directly to their seats after transitions, 90% of the time, the goal was raised. Now the objective was for them to maintain an "empty box" (no check marks for being off-task) for a given period of in-class work time. This started with half-hour blocks, then increased through an hour to a half a day and finally to all day. The increased expectations were implemented gradually over about a four-week period. Each time the students were told what the "rules" were, and each time those who did the right thing were given some kind of educational reward. Always, those doing the right thing were recognized verbally by the teacher--"Linda and Billy are working so quietly that they're not disturbing anyone. Thank you, Linda and Billy." When it reached the point that saying the names of every good child would take too long, verbal recognition was given systematically by sections or rows in the room (for example, announce everyone doing the right thing in row 1 at 9:00, row 2 at 9:15, etc., but keep checking, without comment, all who do the wrong thing each time).

Figure 2


SEATING CHART
CAROL
RICKY
JOE
JANET
DAN
KEITH
KATHY
BRENDA
GARY
SHARON
TERRY
DEBBIE
BETSY
SUE
MAX
LINDA
BILLY
DON
ANN
LARRY
LYNN
BOB
JERRY
MARSHA
TEACHER

Step six: Incorporate a way to keep the behavior going by checking it systematically but less frequently.

In this case, the teacher used a small pocket-size timer which could be set for any time interval up to 60 minutes. When the time was up, a buzzer sounded. The students were told that the teacher would try to "catch them being good" each time the buzzer went off. If she caught them each time (first for shorter periods, then all day), they would have an "empty box" (no checks). The empty box then became the prerequisite for all other rewards.

Step seven: Add other goals to existing system, and give rewards related to behaviors.

1. To encourage children to congratulate each other for accomplishments and to help them ignore criticism, the "superstar" system was initiated. In order to be a superstar, the child had to have an "empty box" indicating no check marks for inappropriate behavior. The system was introduced like this:

   "I'm going to look for people who say nice things to others, and who can ignore it when somebody says something mean to them. I'll put a star in your box each time you do one of those things, and the next day I'll write the names of the superstars on the board. Superstars can do special things when their work is finished. They can play learning games, do extra science experiments, paint pictures, listen to records, work in learning centers, and be student helpers. I've picked two superstars already. One is Amy because she said to Susan, 'Hey, that's really nice writing, I bet you get an E!' The other superstar is Jerry because I heard someone call Jerry a name, and Jerry just ignored it and kept right on working."

Superstars were awarded selectively for many different things from that time on, and they never lost their appeal. A superstar was given, for example, to the perfectionist who missed words on the spelling test and, for the first time, did not cry; stars were given to the whole class the day another third grade beat them in a multiplication contest (109 to62) and they applauded the winners.

2. To reward academic achievement, different kinds of awards were given. These are just a few examples:

   --paper ribbons for mastery of math facts
   --pencils for all E's in handwriting for a week
   --small metric rulers for passing the metric competency test
   --cartoon character stickers for any super good paper (good enough to be put on the bulletin board)
   --getting to be the "checker," the child sitting right beside the teacher, who checked off names as others handed in their work, because you got all E's on your work for a week.

Step eight: Keep changing the rewards so they do not lose their appeal, but do not ever stop telling the children when they do well.

Comments like these are important in maintaining established behavior:

"Wow, you remembered to carry in every problem you added today!"
"This handwriting is much better; all the letters are on the line!"
"When Larry hit you, I thought you'd hit him back, but you didn't. You kept your cool really well!"

Step nine: Add an accountability component to the system whenever necessary.

In this case, three checks (strikes) made an "out." If a child struck out, he or she would have to sit alone, stay in at recess, miss something special, and so forth, depending on the reason for the strikes. Three outs meant they would miss something really special, such as a class trip or party.

Step ten: Keep modifying the system, based on how it works in your classroom for this particular group of students.

Observations and data tell you what, how, and when to change. The system will not work the same way for each teacher or group. A back-to-the-drawingboard attitude is the one thing you must have to make it work anywhere.

Procedures Used in Recording Data. In this classroom, data were taken on all but a few of the total 81 days I taught. (Data were not, however, taken on the 6 days when a substitute teacher was present.) I took data on on-task behavior each time the buzzer sounded. The buzzer was set for variable intervals which ranged in length from 5 to 30 minutes. Time between buzzers was progressively, but not precisely, lengthened as the semester went on. The buzzer went off at least nine times, but never more than 30 times, during the 250 instructional minutes each day. The average was about 15 times per day, and the intervals were not predictable. Percent of the class time on task was calculated as follows:

1. Multiply number of students present by number of times buzzer sounded (for example, 24 x 15 = 360). This represents the total number of opportunities for all students to be "caught" on-task.

2. Count the number of checks in all students' boxes. (For example, if one student had three checks, two others had two each, and two others one each, the total count would be nine.)

3. Subtract number two from number one above (360 - 9 = 351) to get sample of total on-task performance.

4. Divide number three by number one above (351 ÷ 360 = 97.5%) for whole-class percent of time "caught" on-task.

This is admittedly a very crude sampling teachnique. It has obvious limitations including the fact that off-task behavior between buzzers is not recorded, but that one child having a bad day can distort the whole-class percentages. It also does not indicate the percent of time on-task for any given child, although this could be calculated from the data, as it was for Jerry.

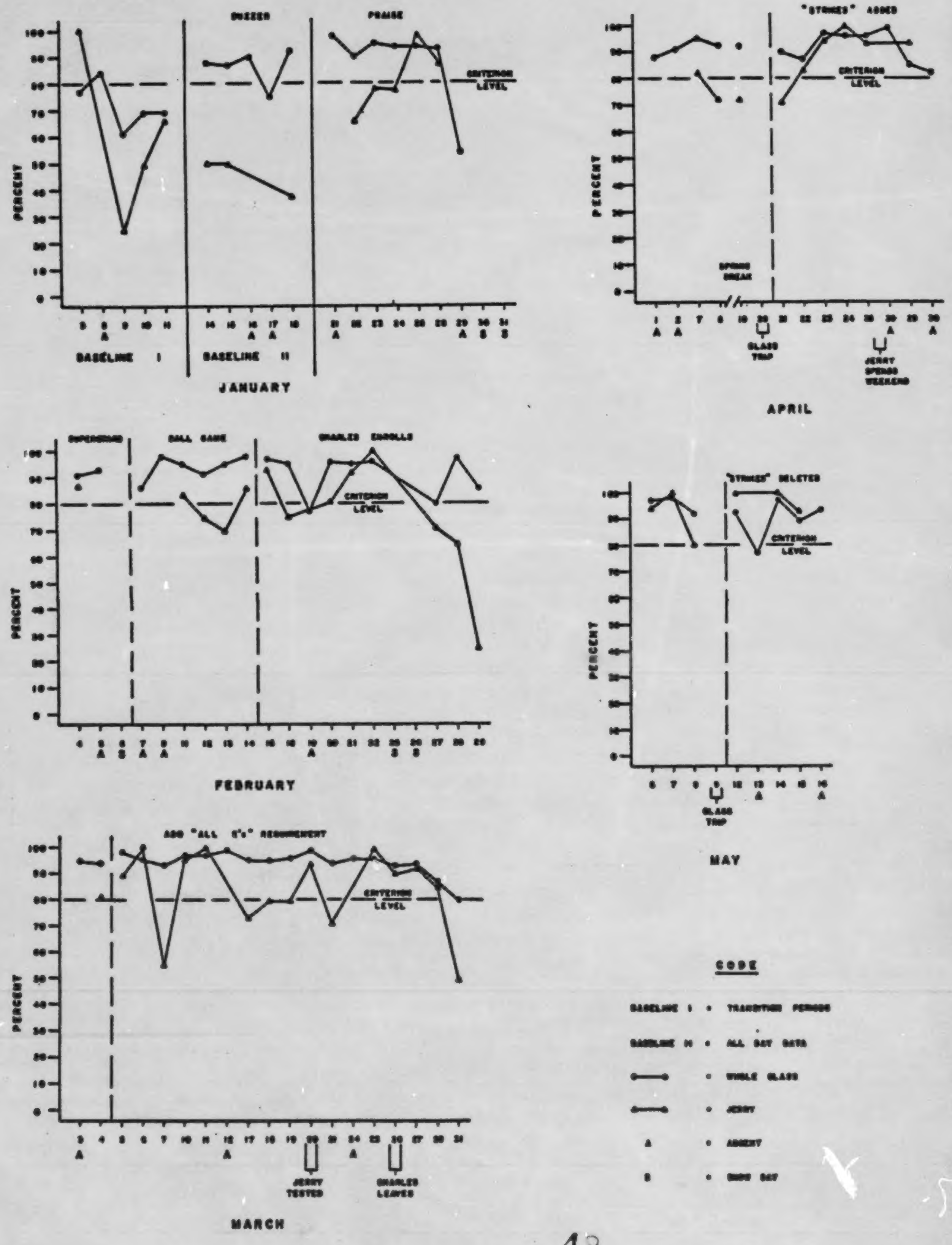
Data Collected: On-task Behavior Samples. On-task behavior for the whole class during the entire semester is presented in Figure 3. Jerry's on-task behavior is presented on the same figure, since the comparison between Jerry's behavior and that of the whole class is an interesting one.

Observations Based on Data Graphs. The data collected early in January were preliminary data collected at specific times. Data collected later in January were variable interval data. During the first five days (Jan. 3, 8, 9, 10, 11) data were collected four times daily, once after each time the class re-entered the room following recess, physical education, music, or lunch. Nothing was said to the students about data being collected. Exactly five minutes after entering the room, I glanced around the room and put a check after the name of each child who was not in seat, quiet, and ready to begin work. During January 14 through 18, the students were told that I would check them regularly to see if I could "catch them being good." The buzzer was set at varying intervals, between 1 and 15 minutes, and each time it went off I glanced around, checked each child not quiet, inseat, and on-task. Beginning January 21, I continued the variable buzzer system, but also I chose 4 or 5 children at random and praised them publicly if they had been "caught being good." January 30's drop may indicate that praise alone was becoming ineffective, or it may simply reflect the mood of the class. It was beginning to snow, and they knew school would be closed for snow days.

Jerry's on-task data for January suggest three things: (1) He was absent frequently, (2) His behavior level was considerably below the average for the group, and (3) He was more likely than the others to experience a drop in on-task behavior following time off from school (after absence or weekends).

February data indicate that the combination buzzer plus "superstar" system was effective in maintaining an on-task level of 80% or better for the whole class during the entire month. Drops in performance following weekends and snow days are noted for the whole group. February data also illustrate that Jerry's absences continued but that his on-task behavior began to reach criterion level. Charles' enrollment on February 15 preceded a very erratic period for Jerry. His on-task behavior reached 100%, then dropped to 25% near the end of the month. Not reflected on the chart is

Figure 3



ON-TASK BEHAVIOR

Jerry's overall positive attitude during this time period, which followed the basketball game. It is interesting to note that my perception of his overall pleasant behavior is inconsistent with the data, indicating that his behavior was quite erratic.

The data indicate that the class as a whole maintained its 80% on-task criterion level through March. On March 5, students were required to have all E's on papers handed in, plus maintain the existing requirement of no checks all day in order to become superstars.

The graph indicates that the class as a a whole maintained its 80% on-task criterion level through March. On March 5, students were required to have "all E's on papers handed in" in addition to maintaining the existing requirement of "no checks all day" in order to become superstars.

March data show that Jerry's behavior continued to be unpredictable. He worked well for the superstar some of the time, while his performance fell below criterion level on other occasions. He did, however, start attending school more regularly during March. On March 20, he was tested by the diagnostician, and he wanted to "go to his new teacher every day." It was at this point that a contract was established for him; he could spend the last 15 minutes of the day with her if he had "no checks" all day long.

The graph shows that the average level of on-task behavior for the whole class remained at or above criterion level for all of April and May (except on May 13). On April 21, a tighter contingency was added. A check for off-task behavior (when buzzer went off) was counted as a "strike." Three strikes in one day made an "out." Anyone with three outs would not be able to go on the class trip on May 9.

April and May data indicate again a high rate of absence for Jerry but an overall behavior improvement. The addition of "strikes" on April 24 may have helped Jerry by making him accountable for his behavior. This procedure, combined with his contact with the diagnostician and the increasing amount of time spent with Dr. Middleton, may account for his high level of performance in late April and early May. It is difficult to infer from the data which of these events effected the change, or whether all of them contributed. (Some additional insight may be obtained from the descriptions located in the management problems and management strategies sections of this chapter.)

The whole class management system helped to set the environment tone and the expectations for Jerry's behavior. This whole-class system, however, was not always effective in keeping Jerry on task. What follows is (1) a series of descriptions of the way in which Jerry resisted attempts to have his behavior modified, and (2) a summary of some of the individual contingency programs implemented especially for him.

Special Management Problems: Jerry. Transcriptions of daily classroom observations seemed to indicate that Jerry tried to resist attempts to change his behavior. They also indicate how difficult it was for me to be consistent with him. Observations made in two different kinds of situations are presented here--the cafeteria, and the reading group--since they are representative of the times during which he had difficulty in behavior. I tried to be consistent about attending to and rewarding him only when his behavior was appropriate, but sometimes that was a real struggle. My log from January indicates one such example.

> I'd been rewarding one or two good workers (those with a superstar and no checks for being off-task) each day by letting them sit by me in the cafeteria at lunchtime. For a day or two Jerry worked hard to win that privilege. Then one day someone else was chosen because Jerry wasn't quite as wonderful as he should have been. His reaction was to push and muscle his way into the favored spot and "take" the privilege anyway. Rather than engaging in a no-win power struggle, I left the table and went to sit with the other teachers (most of the teachers ate together at a table in the center of the cafeteria, rather than with their kids). Jerry went from bad to worse--first he hit those next to him, then he shouted at them, then he grabbed their food (all the time looking over his shoulder at me). When he stood up and started to lift the bench on which others were sitting, I thought I'd leap over the table, sail through the air, and grab him by the neck! Everyone, of course, was waiting to see this big-shot professor blow her cool and do exactly that. I guess that was the only thing that saved me. I just turned to my colleagues and said, 'I want to hit him soooo bad that I can hardly stand it. But I'm not going to because that's exactly what he wants me to do.' When lunch was over, I went over to the kids' table and touched each one on the head to signal they could take back their trays and line up to return to the room. I touched Jerry last. I'm sure he knew why.

The next time he was chosen to be first in line for lunch (about a week later), I did not come right in and sit next to him. Instead, I whispered to him that if he could eat quietly and show good manners for five minutes, then I'd sit by him, He did, and I did.

Another time he was not chosen to sit by me, but his behavior had been good, so I went over and hugged him and whispered, "I can't sit by you today, but you've been good." He kept on behaving well.

Another incident from the log of February indicates that he may have been more responsive to teacher attention than to the "reward" of being first in line, which he ostensibly sought.

> He was not chosen to be first. He tried to cut through to get to the head of the line. I saw him, went over to him and said, 'Sorry Jerry, you can't be at the front of the line today. You

> were back here.' I pointed him in the right direction and started to make him go. He got very angry, starting one of his little, 'I won't do anything at all for you ever again' tricks, and walked toward the door. 'I'm going home,' he yelled. I decided to call the bluff and went into the cafeteria with the rest of the kids, avoiding the confrontation. (I was gambling--praying that he wouldn't really go home!) Soon he changed his mind, went through the line, and came over to sit down at the table. I was sitting at the teachers' table when he came in and sat down. I went over to Jerry, put my arm around him and whispered in his ear, 'Thanks for not getting mad.' He behaved extremely well for the rest of the lunch hour, even though I was sitting by someone else.

But I was not always consistent and positive with Jerry. Sometimes it was my problem; at other times he made it impossible for me to be consistent by continuing to press for confrontations. A final cafeteria incident from March follows.

> As we were lining up for lunch, Tom was in front of Jerry, and Jerry pushed him, wanting to be first. There was a scuffle, so I asked them both to go to the back of the line. Jerry didn't want to go. I turned off the lights in the room and stood waiting by the door. Everybody else was in place. Jerry said, 'I'm not going back there,' but he finally did. He must have decided then--since he couldn't fight his way to the front--that he'd be the very last one, and wait in the room, long after everyone else had gone. I stayed in the back of the line, close to Jerry and Tom, so that there wouldn't be anymore incidents. Jerry stayed in the room with his arms folded, and of course I couldn't let him, legally, do that, so I motioned for him to go to the cafeteria and said, as firmly as I could, 'Cut out that crap!' in a tone that was exaggerated. I really wasn't all that uptight about it, but I knew that the time would come when I would be. He went down the hall quietly and with no further problem. But I knew I was in trouble because he was forcing me to be inconsistent, and setting me up for a big confrontation which I would lose by winning.

The logs from late February also indicate that the reading group, in which Jerry was one of five students, was another setting in which his behavior seemed extremely competitive. Several incidents indicate this pattern.

He had great difficulty during the time each child in his group was working independently in the Programmed Readers (Sullivan, 1969) even though I believed that he needed this kind of instruction, and his reading performance improved as a result of it. He just did not seem to like the rules of the game. The rules were that "first, you finish the page, then you raise your hand and read the words to me, then I write down the number of the page that you have done correctly."

If I had not given that kind of structure, Jerry would have "finished" (by copying the answers) the book in 30 minutes. He would be "finished," but would have learned nothing. He became very antagonistic when that kind of structure was imposed on him and often tried to monopolize all of my attention so that he could do more pages than anyone else. An incident from my log follows:

> I stated the rule calmly, 'You may read your page when you raise your hand quietly.' I went to Bill first, because he had raised his hand, then to Susan, because she had followed the rules. When I didn't come to him immediately he said, 'I'm not going to do the next page.' I ignored him and continued to put points on the board for Bill and Susan because they were doing the right thing. Then he decided to get far away from me and began to work on the floor. I just motioned to the table indicating that he needed to come back and sit down, raise his hand, wait his turn, then read the page. He didn't want to do that so he put on a tantrum. It was almost time to finish, so I recorded the pages completed for Bill and Susan and indicated that it was time to stop. Then he insisted that he had read a lot of other pages, wanted to get credit for them too, and I said, 'You may read to me for the last two minutes of class when you're sitting in your place.' He carried on his little act for maybe 30 seconds and then went back to his place and did what he was expected to do and did it correctly.

Jerry and I had a particularly bad time during the month of March when he decided he did not want to work in reading group at all. This description is from a March log entry.

> During this time period Jerry became so disruptive in reading group that others began to model his behavior. I had to initiate a "time-out" system, in which the entire group had to remain on-task for 15 of their 20 minutes before any of them could go out to recess. I held a stopwatch in my hand and turned it "off" each time any member of the group talked out of turn, got up, or touched someone else. When (only when) they had accumulated 15 work minutes, they could go outside. The first day they all missed 10 minutes of recess. After that, they didn't miss any.

Jerry's behavior deteriorated in his interactions with other adults at this time, also. He behaved miserably in his other reading group, insisting that the special "Title I" teacher let him sit on the table and let him answer first. The music teacher said he was unbearable in her class, and the librarian complained about him too. Several other teachers commented that he knocked on their doors when he walked through the halls and/or terrorized their children in the restroom. Most distressing of all, he began to shout at me, "I hate you," and "Honky teachers only like honky kids!"

I knew that part of the problem was that his behavior "had to get worse before it could get better." This is a common problem for the adult who attempts to reinforce appropriate and ignore inappropriate behavior in a child with a long history of obtaining attention through inappropriate behavior. I also knew he was trying to "push my buttons," to get me to blow up. I tried to continue to respond calmly to Jerry's verbal threats by saying, "I'm sorry you feel that way, but these are the rules and I'm going to enforce them." I tried to be consistent, but I knew that I was not.

Special Management Strategies: Jerry. Three special behavior management programs were implemented for Jerry during the semester. The first plan was only a half day in duration and was a response to an immediate problem. One day in January Jerry said, "My daddy got shot in the head last night, and he's in the hospital." We talked about it for a little while. I said he must be pretty worried about it and I hoped his daddy would be all right. Then I gave him a couple of things to do, to get his mind off the problem. I also said, "Remember you told me you wanted to sit in the front of the row?" He said, "Yes." And I said, "If I catch you being good 10 times before recess, I'll let you sit in front of the row." He tried very hard, and I watched him closely, reinforcing him frequently. I told the other kids why he was allowed to change his seat and they said, "Yeah, that's the best he's ever been!" When I checked the papers in the afternoon, I saw that all of his work was excellent. There was a direct relationship between his behavior and the quality of his work, even when he had reason to act "disturbed." (Later that day I also arranged for him to talk with a counselor.) But his response to this immediate contingency plan was an indication that this approach would be effective.

The second special management plan for Jerry was one that allowed him to earn a big reward early in the semester. Even though in retrospect I see that he did not "earn" this premature reinforcement, I would have made the same "mistake" again.

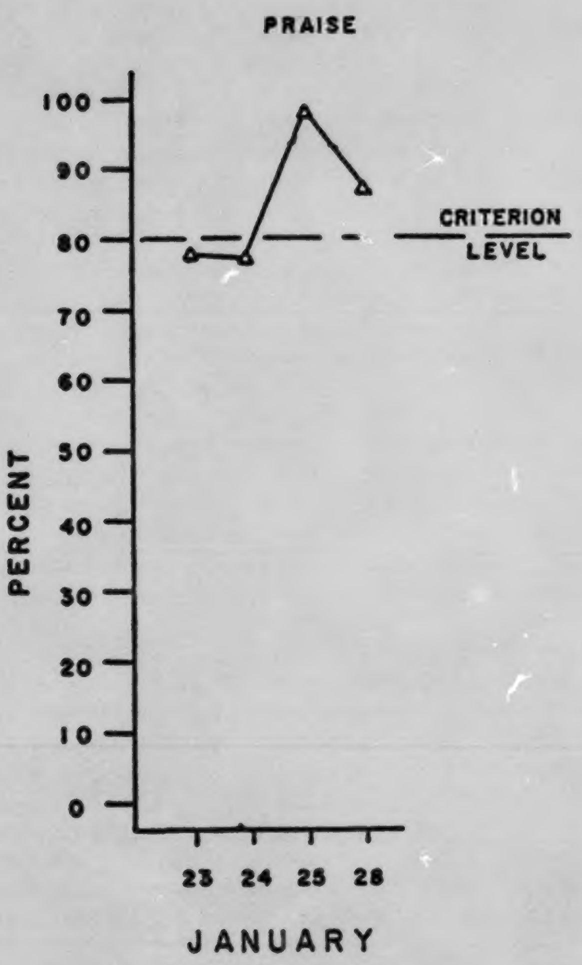
Two of Jerry's major problems were fighting and name-calling. My group plan was not effective in eliminating these inappropriate behaviors. Punishing Jerry did not solve the problem either because when I managed him firmly in the classroom, he took it out on other children on the playground.

Fighting was the first target behavior which I had hoped to decrease. I taped a paper clock to Jerry's desk. Once each hour I came to his desk and circled the number of the hour if he had not been in a fight. If one or more fights had occurred during the past hour, I put an X on the number.

Reinforcement was given to Jerry each hour. If I circled the time on his clock, he earned "superstar" status for that next hour. He missed earning reinforcement two times on the first day, one the second, and none the final two.

I continued to record his on-task behavior during this time period as I did for everyone each day. His on-task percentage for January 23-28 was as follows in Figure 4.

Figure 4



During the next five days I added "name-calling" to "fighting" as a target behavior. Still using the clock system, I circled the time if Jerry had neither fought nor called anyone a name during the previous hour. He failed only once, on the second day, to earn reinforcers each hour.

On the third day in the second five-day cycle, I had an opportunity to offer Jerry a super reinforcer for good behavior. I was given, in addition my own, two more tickets for a University of Kentucky basketball game. I was excited about the possibility of taking Jerry and his friend Eddie to this game, with the help of a graduate student. I discussed it with them and explained the "clock" system to Eddie, who also had some problems with fighting and name-calling. The agreement we reached was that if I could circle at least six of the seven hours on their clocks for five days between now and the game day (six days later), I would take both of them to the game.

It was a risk, premature because it represented a big reinforcement for small improvement in behavior, and it would be a hard act to follow. Also, Jerry was absent on two of these five days, and on the sixth day (game day) school was closed because of snow, so he had not had the opportunity to meet criterion. But he had met criterion for the three days he was there, and Eddie had met criterion all five days. I decided to "go for it." It was admittedly a personal judgment on my part and violated the management principles I had been trying to establish.

I called Eddie on the day of the game to make final arrangements and to reassure him that we could go to the game even though it was a snow day. I tried to reach Jerry too, but he had moved again, and his mother was not at work that day. Since I had already received their signed permission slips and talked about picking them both up at Eddie's house, I hoped Jerry would remember. Jim, the graduate student, and I drove to Eddie's house, hoping beyond hope that Jerry would be there.

He was! He was coughing and he was still sick, but he was there, all dressed up in new jeans and sparkling with excitement. Jim had brought a giant bag of popcorn which the boys devoured. We got cokes and ice cream. Eddie and Jerry took turns sitting with Jim and me (one each half), since the four seats were not close together. Some of Jerry's behavior was not appropriate, because he had never been to a sporting event before, except for "rasslin," and he thought you should "boo" the opponent loudly. But he stopped that when he was told that was not the right thing to do. We all yelled a lot, and our team won the game. Jerry was so tired that he spent the last quarter lying on the bleachers with his head on my lap.

There is noway I can describe the evening except to say it made me feel as I do when my own children open their presents on Christmas. It made me want to laugh and cry, sometimes both at once, to see how much those little boys enjoyed the game.

Jerry and Eddie were super for two whole weeks after that game; they did not fight or call names, and worked hard even when I could not attend to them immediately. Jerry did not get upset when I chose someone else to do things he would like to do, and on two occasions when I sent him back to his seat because he tried to push his way to the head of the line, he did not have a tantrum. It was as if I had some "money in the bank" with both of them and did not have to be a perfect robot in order to be assured that they would behave appropriately. The good behavior did not last, of course, since March was the time when Jerry's behavior deteriorated.

In early March a third special contingency plan was designed, with the help of the school's diagnostician. She had tested him and shared both my views about his potential and my concern for his behavior. She agreed to see him the last 15 minutes of every day, if he had an "empty box" (no checks for fighting, cursing, or aff-task behavior). He looked forward to his special time with her and worked hard for it most of the time. When he began to "make it" consistently, he was told that if he earned reinforcement, he could trade them for a popcorn and Kool Aid party for the class. Finally, after about three weeks, he earned the party, and was applauded by the class. He was better for a few days after that.

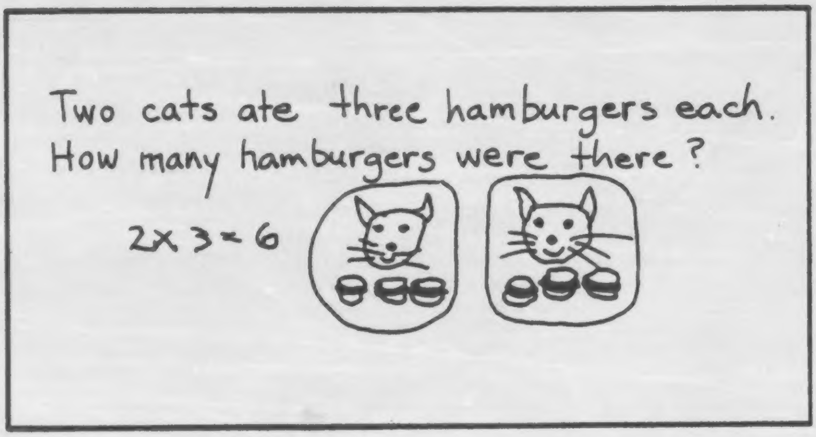
These incidents suggest that Jerry was responsive to attention and to contingency plans. But he was also adept at manipulating adults by threatening to be disruptive if they did not play by his rules. He wanted help immediately and would disturb others if he had to wait. He wanted a perfect score on each paper and would refuse to do any more work if the teacher marked anything wrong. He wanted to have all the turns to read aloud and every chance to answer the questions. Modifying these behaviors was a slow, discouraging, and sometimes unsuccessful process.

Adaptations in Academic Program. As Jerry's classroom teacher, it was neither essential nor appropriate for me to decide whether he was emotionally disturbed, learning disabled, behaviorally disordered, none of the above, or all of the above. What was appropriate was for me to make certain that he was learning in my classroom. This fact required some minor modifications in the academic program. For example, Jerry missed nearly all the answers on the social studies test, which required simple reading and matching of answers, most of which he could give orally. Instead of giving him 30% for the 6 of 20 answers correct, I let him re-take the test the following day. The second time I tape recorded the questions and cut apart the sections of different kinds of questions. He scored 15 correct answers (75%). This simple modification with added structure enabled him to focus on the questions one at a time, rather than being overwhelmed by a complex task to which he had responded impulsively.

Jerry made significant progress in all academic areas during the semester. In no case did this progress require complete one-to-one instruction or drastic changes in the classroom program. Minor adaptations were used throughout, as summarized below.

He progressed in art, in spelling, and in handwriting. The additions of teacher praise, reinforcement, and a focus on specific behaviors ("Make your tall letters touch the top of the line . . .") were the major modifications made in the academic program. Early spelling samples indicated great difficulty, both with vowel spellings and with irregular consonants. We experimented with different ways of learning to spell. The "visual approach," in which Jerry wrote the "hard parts" of the word in large red letters, did not help his spelling. The "auditory method," in which he pronounced words by syllable and thought about the sounds, brought better results. His best spelling performance occurred when he practiced spelling the words by syllables. I stood next to him as I gave the test, pronouncing each syllable slowly and asking him to "think about the sounds." Collecting data on his performance in different approaches to spelling helped me to determine which was was best for him. Jerry's math performance was most interesting of all. Most of his responses to computation problems were impulsive and without patterns, but he could figure out word problems when given structure and help. For example, he did well when he drew pictures of the problems as illustrated below.

Figure 5



Two cats ate three hamburgers each.
How many hamburgers were there?

2x3=6

Often his math was so spatially disoriented that it was impossible to grade. When he graded his own papers and made errors, he would cross out his work. Sometimes, however, he was capable of satisfactory work in math, and his performance, with the help of a student tutor, was also more than satisfactory. This performance verified the value of structured teaching and of peer tutoring for Jerry.

By the end of the semester, Jerry had made significant progress in all academic areas. On the final spelling test he only missed two words out of twelve. His math test was over 70% correct and he finished all of it. His reading was much better; he was reading 88 words a minute with no errors and figuring out unknown words by using sounds and context. His reading achievement tests were all above criterion level. In every case there had been some minor modifications in the curriculum, but in no case were the modifications extensive or extremely time-consuming.

Need for Resource Persons: Limitations of Classroom Teachers. It was obvious that I had done better in adapting the academic curriculum to Jerry's special learning needs than I had done in modifying his social behavior to conform with classroom expectations. I believe that this case, more than any other, illustrates the need for classroom teachers to acknowledge their limitations, to ask for and to profit from the collaborative assistance of resource persons. The diagnostician, previously mentioned, was very helpful to me, and there was another resource person whose assistance was absolutely essential--Dr. Ernest Middleton, an associate professor at the University who was a specialist in the education of urban black children. Dr. Middleton was black, and this was part of the reason that he was able to help Jerry when I did not know what to do.

Jerry's behavior got really bad in late February and early March, starting about three weeks after the basketball game when our "honeymoon" was definitely over. Jerry began to have many bad days, times when he could not seem to tolerate anything less than exclusive personal "ownership" of the teacher, days when he pushed rules to the limit and got much much worse when he was ignored.

My records show behavior was erratic. I was unable to analyze the reasons for his good behavior, or to relate his performance to the variables in my behavior and in the classroom environment.

I was deeply concerned about Jerry when two parents and a very mature, tolerant child complained to me about his behavior:

> My child said a boy named Jerry threatened her that he would beat her up if she didn't bring him some candy tomorrow.
>
> My son is very upset because he says a boy named Jerry calls him dirty names and makes fun of him when he makes mistakes.
>
> Jerry acts like he has to be the king around here. He's really nice to me if we play a game and I let him win, or if he gets to be first in line or be a superstar. But if I win or I get picked for something instead of him, he hits me and acts real mean. I just don't know what to do.

Jerry presented a real dilemma for me as a white middle class teacher. He was an urban black child whose behavior and academic performance differed significantly from both the behavior of the classroom group and the expectations for his grade-level. I agonized over whether his behavior and/or academic performance was deviant, in need of remedial/special programmings, or whether it was a misunderstood variation of behavior illustrative of acceptable diversity. In the case of Charles, I felt comfortable about saying "both of the above" because his academic and social skills were clearly deviant. With Jerry, I did not know whether his test data were valid, I was not sure how much of his behavior would be acceptable in his black urban society, and I did not feel that I had either the knowledge or the right to distinguish between what to modify and what to accept. At the same time, his behavior was so different from classroom standards that I was afraid it would intensify some of the students' stereotypes about blacks.

It was extremely threatening for me to admit that I did not know how to handle the situation. Teachers often learn not to admit failure and not to ask for help. It was doubly threatening to realize that a serious request for help would involve inviting an observer into my classroom to watch me at times when I felt particularly ineffective.

The only person I could ask was my friend and colleague, Dr. Ernest (Pete) Middleton. I believed that he understood, both as a result of having studied them and having lived with them, the problems and their solutions. It was a risk, but I thought Jerry was worth the risk. It turned out to be exactly the right thing to do.

When Pete Middleton first came to observe, my students were walking back to their classroom after having seen a movie. Jerry punched someone and did a cartwheel in the hall. Dr. Middleton noticed Jerry immediately and was eager to provide help. He came back several times to observe Jerry in a variety of settings. And, most wonderful of all, he invited Jerry to his home for the weekend as the guest of his family. Pete Middleton was tough with Jerry, but he also gave him lots of attention. I watched Pete, listened to him, and began to learn what to do. Pete Middleton helped me learn how to be more effective with Jerry, and he helped Jerry learn how to relate to others. The value of his knowledge and of his contributions cannot be over-emphasized. It highlights the limitations of any one classroom teacher and gives evidence of the importance of collaborative effort.

Implications for Teacher Education

Jerry is a single example of the range of behavior problems found in today's elementary school classrooms. That one example illustrates the need for teachers to have a knowledge base about children's behavior and its implications for classroom management. It also illustrates the need for teachers to acknowledge their limitations to seek assistance when required.

This section features a brief presentation of three issues: (1) What inferences might be drawn about the factors operating in this classroom which might have helped Jerry learn to manage his behavior? (2) What is the research base supporting the need for or nature of the knowledge, skills, and attitudes in this area which seem important for teachers to acquire? (3) What are some areas which the present study and related literature indicate might be important ones for further study?

Effective Practices Used in This Classroom. It seems apparent that both the whole-class management system and the individualized contingency plans were essential components of the classroom program which enabled Jerry to learn how to manage his social and academic behavior. It should also be noted that Jerry's presence in the group helped to keep me on my toes; there was no way to "wing it" with a Jerry in the group. He forced me to get my act together.

It also seems apparent that Jerry's behavior problems were complex, and that this was a situation for which consultation and assistance of outside resource persons were required. The opportunity for Jerry to learn from an adult model such as Dr. Middleton was undoubtedly an important factor in helping him to understand the kind of behavior that was acceptable in the classroom.

Minor modifications in the academic curriculum were apparently important in helping Jerry to improve in essential basic skill areas. His improvement and its resultant increase in self-image may, in turn, have facilitated improvement in his social behavior and acceptance by peers.

A management strategy which was clear in its expectations and firmly consistent in its approach seemed essential for Jerry. It also seemed important to give him positive reinforcement and immediate rewards which were contingent upon appropriate behavior. It also seemed important for the teacher to understand that his behavior was firmly established and resistant to change, that it might get worse before it got better. It was important for the teacher to understand that Jerry's personal attacks on adults might be defense mechanisms or attempts at manipulation. These attacks made it difficult for the teacher to enforce the rules in a firm and consistent manner with Jerry, and not be drawn into direct power struggles with him. Finally, it was important for the teacher to understand how desperately Jerry needed adult attention and approval.

The Research Base on Classroom Management. The need for teachers to interact positively with exceptional children was considered a "validated competency" as early as 1972 (Shores, Cegelka, and Nelson, 1972). Three separate studies indicating the importance of this competency have been summarized by Shores (1972). Thomas, Becker and Armstrong found that, while teacher approval (touch, smiles, praise) increased children's appropriate behavior in the classroom, teacher disapproval increased their gross motor activity and noise (1968). It seems to be teacher attention, rather than the type of attention (praise and scolding), which increases studying behavior (Hall, Lundt and Jackson, 1968), although ignoring alone is ineffective, since rules and praise are other important elements in classroom control (Madsen, Becker, and Thomas, 1968).

It is interesting to note that teachers often have higher rates of reprimand for misbehavior than praise for good behavior, and also that they tend to praise good academic performance, while ignoring appropriate social behavior. Nelson (1981) has summarized much of the research base in the area of classroom management, particularly for exceptional students. Part of his summary follows, with permission of the author. Citing the work of White (1975) and Thomas, Presland, Grant, and Glynn (1978) Nelson indicates that most teachers give disapprovals at much higher rates than they give approvals. He summarizes several other studies which strengthen this observation and provide insight into its possible consequences:

> Walker and Buckley (1973), and Walker, Hops, and Fiegenbaum (1976) investigated the rate of teacher praise and disapproval toward behaviorally deviant and non-deviant children, and also studied the child behaviors upon which these responses were contingent. They found that teachers interacted significantly more with deviant children, and that the majority of these interactions consisted of attending to inappropriate behavior. Walker (1979) observed that the outcome of negative teacher attention to acting-out children is an increase in inappropriate child behavior . . . . Thus, teacher attention to undesired behavior, even though negative, functions as positive reinforcement for such behavior. Peer attention to this behavior also serves as positive reinforcement, as documented in studies by Buehler, Patterson, and Furniss (1966) and Solomon and Wahler (1973). In both of these studies, peer attention to inappropriate responses was observed to exert more powerful control over child behavior than the reactions of adults.
>
> As Walker (1979) pointed out, the cumulative effect of disproportionate teacher attention to acting-out children's misbehavior, in addition to peer support and attention, is to strengthen inappropriate behavior patterns. The unfortunate result of this combination of events is a classroom situation in which the teacher becomes increasingly reliant upon progressively more aversive management practices (i.e., public scoldings, sending children to the principal's office, spankings, etc.). These measures may have temporary suppressive effects for some children but no effect, or a strengthening effect, on others, and are not likely to succeed in the long run, particularly if the peer group reinforces deviant behavior (pp. 120-121).

Nelson concludes that:

> A common side effect of aversive teacher control is power struggles between the teacher and some, or all, pupils. Like adults, children react negatively to aversive management, and particularly if they sense that the teacher is reacting out of frustration or feels out of control of the situation, respond with even more intensive misbehavior. Thus, behavior management practices

> which are not carefully thought out beforehand, which involve little or no child input, and which consist largely of reacting negatively to inappropriate pupil behavior are to be avoided (Nelson, 1981, pp. 120-121).

The efficacy of a specific type of positive interaction, applied behavior analysis, has been documented elsewhere (Nelson, in press). Nelson has also outlined the guidelines which teachers might follow in handling behavioral crises (see Appendix in Morsink, 1981). However, the techniques used in this study could not be defined as applied behavior analysis. They were, instead, eclectic adaptations of a variety of management techniques, including positive teacher/student interactions.

Questions for Further Study. At least three questions for further study might be raised, based on experience and the related literature:

1. What is the nature of the positive classroom atmosphere? Is it important that all interactions emphasize attention and reward for good behavior? Under what conditions are "response cost" or "time out" more effective?

2. What are the essential skills for the classroom teacher whose role is that of general manager of the environment and supporter of others on the professional team? What training is needed to prepare the classroom teacher for the role of collaborator, rather than sole provider of special services?

3. What kind of knowledge about children's behavior does the classroom teacher need? To what extent do teachers need to have a knowledge base drawn from related disciplines such as psychology, sociology, ethics, etc., in order to enable them to recognize "normal" as distinguished from "deviant" behavior, and to be able to implement a variety of effective management techniques?

4. How can we select and/or prepare teachers who are psychologically able (non-defensive, patient, accepting of small improvements, etc.) to deal appropriately with disturbing behavior?

Working with children like Jerry is at once the most difficult and the most rewarding aspect of teaching. For those who would insist that "children like this shouldn't be in regular classrooms," I would like to abstract two final comments from my logs.

> Perhaps the most interesting observation about his case is there was a difference in my (January-April) behavior on the days Jerry was absent. I was more relaxed, more flexible; I laughed more. But I didn't monitor the kids' performance as closely or establish such a tight relationship between behavior and reward. I didn't feel the pressure to be prepared, to react correctly to whatever happened, but that meant *I wasn't* as well prepared or as precise in my reactions. The class was more fun, *but not as effective*, on the days Jerry wasn't there. I'd have to admit,

in my case, that between January-April, I didn't really enjoy my job as much when Jerry was there, but that his presence in the classroom helped me to be a more effective manager. Then, after Pete began to help Jerry, I started to relax and enjoy myself even when Jerry was there.

Chapter Four

ADAPTING CURRICULUM TO SPECIAL NEEDS

> The preparation of all teachers should include the study of and first hand experience with curriculur principles, guides, and structures . . . . The means and procedures by which curriculum is developed, adopted, and changed should be understood and there should be practice in designing and modifying curriculum and materials, especially to suit the individual needs of students (Reynolds, 1980, p. 9).

Statement of the Problem

The problem statement for this chapter is also a quotation from Reynolds (1980):

> It is clear that the presence of exceptional youngsters in regular classes increases the breadth and variety of students' learning needs and skills. This greater spread of abilities, in turn, creates a major demand for curriculum that treats subject matter with fewer assumptions about prior learning and previously acquired skills. Teachers have been working hard over most of the past century to make their classes more homogeneous. IEP's and the increasing presence of handicapped students in classes disrupt such assumptions and trends. If the heart of the movement toward individualized and personalized instruction is the optimal development of each child, heterogeneity is its essence (pp. 8-9).

Presently classroom teachers are trained to teach children in homogeneous groups. In basic skills, particularly, children's curricular needs are heterogeneous. The observations and research base presented in this chapter document this assertion and indicate ways in which the classroom teacher might, in the real world, adapt the curriculum to children's special needs.

This chapter is divided into three parts, one each for a discussion of reading, math, and written language. Each part includes a case study with illustrative classroom practices and implications for teacher education. For a discussion of the procedures used for children other than the ones in the case study, the reader is referred to the teacher's manual, a second product of this study (Morsink, 1981).

Case Study: Eddie

Eddie was a large, quiet black boy with classic features and a beautiful smile. He had repeated first grade and had been tested for and placed in a resource room for the educable mentally handicapped. At the time of this study, he had been in the EMH class for two and one-half years, and

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each reassessment suggested that he needed continued individualized programming in all academic subjects. He was initially classified as EMH, rather than LD, because, although the psychologist questioned the validity of the IQ score, Eddie's academic deficits extended to all subject areas. By the end of the semester, however, his IQ score was higher, and Eddie had made significant progress in math. The most serious residual problem was a reading disability of possible visual-motor origin.

The first hour that I observed in the classroom, I saw that Eddie was not included in any of the activities. For him, "mainstreaming" meant only that he was placed physically in this class for three hours a day. He was a non-reader, the only child who had not begun to learn cursive writing, and he received all of this basic academic instruction from the resource teacher in his special class. The morning that I observed him in the regular class, he spent more than 20 minutes taking things out of his desk and rearranging them, ostensibly looking for crayons. I think he was just trying to look busy so the other students would not notice he had nothing to do. (The other children were engaged in a discussion of seatwork for math, language, writing, and spelling while he was there. They whispered reminders to the child passing out papers, "Eddie can't read; Eddie doesn't get a math sheet; Eddie doesn't do language.") Eddie broke his pencil, deliberately it seemed, and he went to the pencil sharpener six times in an hour. When it was time for Eddie to go to his resource class, he left the room punctually and without disturbance.

When Eddie had been tested after being retained in first grade, he was described as having good judgment and knowledge of actions in social situations. His general information level, visual-motor skills, abstraction skills, and vocabulary, however, were all low. He did not know the alphabet or colors, had a math level of just over first grade, and could not read at all.

Two years later test scores indicated that he could add and subtract without regrouping, though his memory for basic facts and his math skills in time, measurement, and money were still weak. He could recognize and print some lower case letters and recognize a few beginning consonant sounds, but his sight vocabulary, ability to discriminate short vowels, or read phonetically regular trigrams were all at readiness level. His IEP in reading outlined a program to help him learn the alphabet in sequence, to discriminate ending consonant sounds and short vowels, to pronounce and spell CVC trigrams, and to recognize pre-primer, primer, and Level 1 Dolch words. This reading program had been implemented with Eddie during the whole previous semester, but he had improved very little. The most serious problem, then, was in reading. Eddie was in the third grade, almost ten years old, but he could not read at all. A related problem in self-concept had begun to develop, and by the middle of third grade, Eddie was also a potential discipline problem.

Illustrative Classroom Practices

Three kinds of classroom practices were used to help Eddie with his reading problem: (1) a program emphasizing improvement in self-concept, (2) a "nonreading" curriculum implemented in the regular classroom, and (3) a special individualized remedial program administered by a graduate student. Each is described briefly here.

Self-Concept Improvement. My first goal as Eddie's classroom teacher was to involve him in as many classroom activities as possible in order to help him feel like part of the group. I prepared a special folder of seatwork for him, with worksheets in each of the same areas assigned to the other children. This required Eddie, just like everyone else, to complete seatwork assignments which were brought to the front of the room, stapled together by the "checker" (a child), and left on my desk for grading. I spent five minutes alone with him during the seatwork period each morning, explaining what he was to do. I was able to give him this special time by modifying the procedure for presenting seatwork explanations to the group. Formerly, the teacher had explained the seatwork orally to the entire class. I changed this procedure by minimizing the oral group explanations and spending most of my time circulating among the class to answer individual questions. This action avoided an impression that Eddie was the only one who needed special help, or that the expectations for him were totally different from those for the rest of the group. Also, I taught him to write his name in cursive and then phased him into the regular handwriting program. And finally, I included him in the student tutoring system, asking him to tutor Charles in math, and having several others help him learn to use the typewriter for composing stories. The major strategy in the self-concept improvement program was to treat Eddie like everyone else in terms of rules, workload, and expectations for task completion.

Special Work. At first when I showed Eddie how to do anything different, such as write his name, do math with us, come to the circle for science, etc., he shouted, "No!", stuck out his lower lip, and slouched in his desk. But after a few minutes he stopped sulking and tried whatever I had asked him to do. Eventually the refusals ceased. He seemed to be so proud of his ability to write his name in cursive that he wrote it on the flag he designed for the bulletin board.

Eddie went through a behavior change during the semester. At first he was quiet and withdrawn. He kept his head down and did not make eye contact with anyone. He interacted only with Charles and Jerry. He seemed to have assumed the role of the low man on the totem pole and acted as if he understood his place in the regular classroom. Then, when he was included in activities and as he learned new skills, he became aggressive with other chldren and demanded more of my time. Sometimes he sought my approval through hard work and good behavior, but other times he was openly competitive, especially with Jerry, for my attention. I perceived this too as an improvement since I saw it as the beginning of an indication that he was someone worthy of attention and approval.

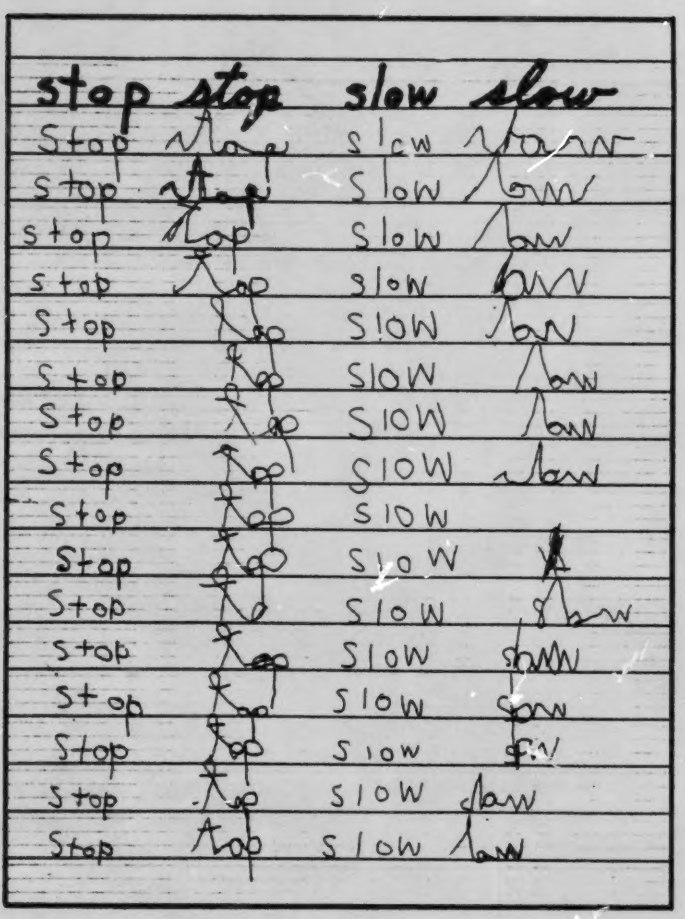
After an initial period of negativism, then some aggression, Eddie's behavior began to stabilize. On April 2, he was voted "Citizen of the Month" for March, an honor given to children who are well liked by their peers. He was very pleased.

Accountability. Generally, Eddie agreed to do modified versions of the regular seatwork. There were a few times, however, when he either refused to work or simply did not finish his assignments. When this happened, he faced the same consequences as the other children; it was almost a tradition in that school that those who did not finish work did not go out for recess. He was really angry the first time this happened, quite verbal about telling me how much he hated me and how he was going to run away from school and never come back. I said I was sorry he felt that way, but everyone in the class had to finish work before they could have recess; he could be angry with me if he wanted to, but I would still have to keep him in at recess. He finished his work angrily and sulked for the rest of the afternoon. The next morning, however, he said he wished I was his mother. I stared at him, frankly startled, and said, "Oh, you wouldn't want me to be your mother; I'm mean." He scowled and replied, "I *like* mean people."

In another incident, Eddie was held accountable for his fighting behavior. Marty, one of the other boys, had called him a name, just in the last five minutes of the school day when I was handing out the permission slips for a field trip. Before I knew what was happening, Eddie tore across the room and threw a leg punch at Marty, kicking him right in the face. Obviously I had to take them both to the office immediately because Marty was hurt and there would have to be an accident report. The other children thought Eddie was really going to "get it" in the office, but I decided that a lecture from the principal or from me would not solve the problem because that would not help Eddie to accept the consequences of his behavior. Instead, I asked him to help put the band-aid on Marty and told them to "settle" their differences. They were given five minutes in a quiet corner with the ultimatum: "Either settle your problem or neither of you can go on the trip; this is your only chance because if you have another fight, you blow it." They talked, shook hands, and said their "sorries" and decided to be partners for the field day. As it turned out, they had a great time on the trip. Again, the point was that Eddie's behavior was not excused because of his handicap. He was held accountable for his actions and he began to learn to handle himself. His self-concept improved with each success.

Handwriting. Teaching Eddie to write in cursive was another strategy for helping him feel like part of the group. My first thought was that Fernald tracing (1943) would be the method of choice, and I allowed him to select words he wanted to learn to write. But this activity, which involved laborious finger tracing, was aversive to him. Next, I asked him to practice writing "a page of words," first in manuscript, then in cursive. The problem here was that each writing sample was a copy of the previous sample rather than a copy from the original model. By the end of the page the product was unrecognizable. (See Figure 1.)

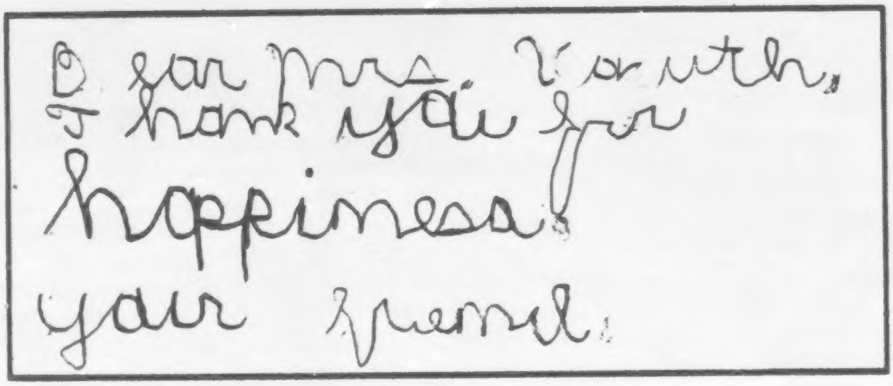
Figure 1



Finally, we used a fading method and found that it was successful. First I wrote the whole letter or word, then I wrote it several times, each time leaving off a little bit more of the model. His task was to write the whole letter or word using dots as guidelines.

Eddie was never able to copy from the board and should not have been required to do so. His visual-motor skills were not mature enough to enable him to shift his focus from near to far and to hold the visual image in mind. Eddie did, however, respond to both the humor and the task of handwriting practice, using the Harvey Hippo dittos. His ultimate success in writing, however, was the letter he dictated, I wrote, and he copied to the school secretary on National Secretaries Week. (See Figure 2.)

Figure 2



Dear Mrs. Yoruth,
I thank you for
happiness!
your friend.

It showed not only that Eddie had learned to write, but also that he could use writing to express ideas. The secretary, who wiped noses, lent lunch money, and provided band-aids, treasured Eddie's letter.

Giving Eddie instruction in handwriting, then, was a way of developing his self-concept by making him feel more nearly a part of the group and by helping him master a "grown up" skill.

Peer Tutoring. Finally, I believe that Eddie's self-concept improved as a result of the peer tutoring program. He was often assigned to tutor Charles in math. Eddie turned out to be an excellent tutor--patient, clear, firm, and positive. He taught Charles to measure with centimeter blocks and helped him to improve his speed and accuracy in basic math facts. Eddie received tutoring from a peer in the use of the typewriter. He wanted to use the typewriter so badly that he would copy whole stories from books in his very best manuscript just to get permission to type them. However, typing was hard for Eddie because of his visual-motor problems. His tutor showed him the "mechanics" of typing and helped him find the letters on the keys. Being both a tutor and a tutee may have helped Eddie to view his strengths and weaknesses honestly, without undue concern for the weaknesses.

The Nonreading Curriculum. A nonreader placed in a classroom above first grade level may find that reading disability interferes with progress in all areas since the curriculum is so dependent on reading. For this reason, it is important to provide a nonreading curriculum. The nonreader can and should participate in science experiments, social studies activities, and class discussions of all kinds. Media can be used to transmit information, and the nonreader can be given a buddy who reads to him or her aloud. When written activities are required, the nonreader can dictate ideas either on the tape recorder or to a child or teacher who writes them down, to be copied by the nonreader. It is also essential that the teacher not assume that the nonreader is unable to function in math operations, since this skill might be totally unrelated to the reading problem. Eddie was quite capable of learning in math. All of the above strategies were implemented for Eddie as part of the nonreading curriculum. None was difficult or time-consuming. Brief examples of his progress in science and math follow as illustrations of his nonreading curriculum. My log indicates:

> Eddie really did well in the science group. When we were reporting on our experiments with batteries and bulbs, he asked me to read him what it said in the book. Then he copies carefully "the bulb went on." He also began to participate in the discussions of science concepts. When we talked about systems and subsystems, Eddie waved his hand frantically and said, "The bub is a subsystem too, and so is the battry!" He was grinning broadly because he knew he was right. It was his first contribution to a class discussion.

Eddie made excellent progress in math. He learned to measure concrete objects in centimeters and meters, using a ruler and metric stick. He served as class "treasurer" a few times and was able to count 70¢ in change and write an IOU for those who borrowed lunch money. He also learned to tell time.

To assist Eddie in mastery of the basic subtraction facts, a ditto book called "Monster Subtraction" was used. It featured fun practice sheets grouped by two's, three's, four's, etc., and included flashcards, mastery tests, and mastery award ribbons. Eddie won a ribbon for the mastery of each set of facts when he could give the correct answer to each flashcard in less than five seconds. These worksheets and activities were included in his seatwork folder each day and required less than five minutes of my time for selection and grading.

In early May, when the other children were doing three-column subtraction, I decided to let Eddie try this too. I simply showed him how each column was a separate little problem:

$$\begin{array}{r} 8\ 5\ 7 \\ -\ 1\ 3\ 4 \\ \hline \end{array} \quad \text{is just like} \quad \begin{array}{r} 7 \\ -4 \\ \hline \end{array} \text{ (starting with ones place) and } \begin{array}{r} 5 \\ -3 \\ \hline \end{array} \text{ and } \begin{array}{r} 8 \\ -1 \\ \hline \end{array}$$

He got eight out of eight correct the first try.

Because his spatial orientation was confused, I did not try to explain borrowing. Instead, I showed him how to subtract one-digit from two-digit numbers by counting backwards:

$$\begin{array}{r} 43 \\ -6 \\ \hline \end{array}$$

write 43
count 6 42
41
40
39
38
37 the answer.

Again he scored 100% on eight problems the first day.

Later I showed him the mechanics of regrouping in two-column addition (carrying) from the ones column to the tens. He watched me do four examples and showed me his work each time I stopped at his desk. Again he caught on fast and worked accurately. When the class did multiplication, he answered the problems by using blocks or by using the calculator. All his work in math indicated that he had minor visual/motor/spatial orientation disabilities in this area, but that he could do adapted versions of the regular class assignments. This was a significant finding.

Special Reading Program. Initially I tried to give Eddie some special help in reading. My first method was to allow him to select any small, easy book he wanted to read and to help him tape record it. I did this by reading him one sentence of the book at a time and asking him to record it on his tape. After he had recorded a whole page, Eddie was told to listen to the tape over and over again while looking at the page in his book.

Soon, however, I decided not to continue this program with Eddie, even though helping nonreaders to acquire beginning decoding skills was my specialty. It was apparent that (1) I did not have the time to work intensively with him, and (2) the remedial program was so different from the regular curriculum that it was calling attention to Eddie's disability.

Next, I tried giving Eddie some self-instructional materials and programmed worksheets in reading as seatwork assignments. They were taken from the Tutortapes (Root, 1972), the Sullivan duplicating masters (Sullivan Associates, 1969, and the DELTA materials (Morsink, 1977). All emphasized beginning decoding skills. This approach matched his IEP and complemented the reading program provided by the resource teacher. These materials, however, appeared quite aversive to Eddie, perhaps because he had been exposed to the same type of instruction for the past two years without making significant growth, or perhaps again because it called the group's attention to his disability.

Finally, I decided that a unique experimental approach was warranted. It emphasized rhythmic oral language input, focused on visual recognition of phrases and words rather than sound elements, and it included a continuous measurement component. This program was conducted outside the classroom by a doctoral student in consultation with me, the resource teacher, and a University consultant.

The description of Eddie's tutorial program which follows was adapted from the report witten by his tutor. A complete description can be found in the original document (Skouge, 1980). Eddie's experimental reading program was based on the premise that predictable print permits the beginning reader to apply previously learned rules of spoken language to the new skill of reading (Goodman, 1967; Chomsky, 1978; Smith, 1978; Samuels, 1979). It was an "assisted reading" program similar to those described by Hoskisson (1979), or Chomsky (1978), with phrases and sentences, rather than isolated sight words or word phrases, as its focus. "The skill to be taught was essentially a pre-reading skill. Eddie was trained to "memorize" a structured language poem, i.e., one with a repetitive, cumulative, highly predictable pattern: I know an old lady who swallowed a fly."

This was believed to be an appropriate skill for Eddie by the doctoral student conducting the training and by the University consultant. It was hoped that this assisted reading experiment would help Eddie learn that print represents language and that it would allow him initial success in reading a book.

Two research questions were posed (Skouge, 1980):

1. After Eddie is trained to read the poem in context (to criterion level), will his skills generalize to the successful reading of the component sentences and sight words when randomly presented on flashcards?
2. Is a "delayed-prompt" assisted reading procedure an efficient and errorless strategy to train Eddie to "memorize" the repetitive poem?

All instruction occurred in a corner of the teachers' preparation room. It was one-to-one direct instruction. To control for distractions, Eddie and the trainer were alone in the room, side by side at a table, facing the wall. Eddie was to read the print with fluency, with 100% accuracy or self-correction, three consecutive times with the trainer in the training setting.

Definitions

fluency = 85 w.p.m. or faster, and less than a 7-second pause on/between any word(s)

accuracy = every word is read AS PRINTED, i.e,, any substitutions, mispronunciations or omissions are errors (unless self-corrected, see below)

self-correction = If Eddie commits an error, he has 7 seconds to discover it on his own and to read the word AS PRINTED. (He will receive no cues from the trainer that an error has occurred.)

Pre- and post-tests were administered to measure generalization to word reading and sentence reading outside of the context of the illustrated text.

Sessions were 30 minutes in length, one per day (usually four days per week). Each session began with a REVIEW (to criterion) of the last NEW line(s) mastered in the previous session. When the REVIEW criterion was met, training carried on from the termination point of the previous session.

The poem was trained cumulatively, stanza by stanza. A new stanza was trained, first in isolation and then chained to prior trained stanzas. Although the school year ended before the last stanza could be trained, the procedure did prove itself to be relatively errorless (84% appropriate responding) and time efficient (approximately 5 hours). There were several procedures that proved inefficient and unworkable, however, and these were changed during the training program. These are described in detail in the tutor's report (Skouge, 1980). Skouge concludes:

> Eddie recognized only four of the 48 sight words prior to training, indicating that this text was far above his "frustration" level in reading. Yet, he was able to successfully meet a very stringent performance criterion. This speaks well for the "repeated practice" procedure.

In addition, Eddie appeared eager to start each session and on three occasions requested to demonstrate his new skills to his resource room and regular classroom teachers. This was the first book that he ever truly mastered, and this probably was a factor. It was of course acknowledged that this intervention program alone had not taught Eddie to read. Much more follow-up programming was planned, including the substitution of new words and phrases into the story's syntactic pattern (Martin, 1971) and the use of creative flashcard and word games similar to those used by Chomsky (1978). These activities comprised, as indicated earlier, just the first step. But it was more successful than those previously taken by Eddie and warranted further study. The point is that it was a technique which provided a great deal of insight into Eddie's abilities and his learning style. Yet such individualization and careful daily monitoring could not have been done by the classroom teacher.

Implications for Teacher Education

Eddie's case illustrates the problems encountered by many elementary class children who have difficulty in learning to read. It is an example of why the classroom teacher needs to understand both the nature of reading disability and the process by which normal children learn to read.

Two issues with implications for teacher education will be presented briefly below: (1) What inferences might be drawn about the effectiveness of the methods used with Eddie in this classroom?, and (2) What is the research base supporting the need for, and nature of the knowledge, skills and attitudes in this area which seem important for teachers to acquire? In the whole chapter summary, a third issue will be raised. What issues might the present study and related literature indicate to be important ones for further study?

Effective Practices Used in the Classroom. Many special methods were used simultaneously with Eddie. A program aimed at enhancing his self-concept was initiated just prior to the introduction of the special reading program. The special reading program itself departed from the reading programs widely used in either developmental or remedial settings, and it was quite discrepant from the procedures used previously by this author. It was essential, however, that all of Eddie's instructional personnel have a repertoire of knowledge about reading that enabled them to consider options beyond the stereotypical "place him in a lower level of the basal series" response.

A second effective practice would seem to be the use of a special tutor for the mainstreamed child with a reading disability. The initial assumption of "tutor" role by the classroom teacher was an error, since it called the group's attention to Eddie's difficulties and seemed to intensify his problem. In addition, it was found not to be possible to provide large amounts of individual instruction to a disabled reader in a large group setting. It was both possible and desirable, however, for the classroom teacher to provide experiences and supportive activities which helped Eddie to be accepted as part of the group and to be successful in other academic areas while he was struggling to overcome the reading problem.

The importance of the "nonreading curriculum" for the disabled reader cannot be overemphasized. Initially described by Blau and Blau (1968), this approach features the use of alternate ways to provide input for children who cannot obtain knowledge through reading. Often, media, hands-on experiences, and "buddy reading" are used. It is essential to provide this alternative input, since so much of the school curriculum is based on reading. A nonreader falls progressively further behind in everything in a print-emphasis classroom and may eventually score so low on achievement tests as to be considered generically retarded. In Eddie's case, the use of nonreading procedures enabled him to continue to acquire knowledge and to demonstrate incremental mastery in academic areas other than reading.

Finally, the measurement of progress and documentation of the effectiveness/ineffectiveness of selected methods was extremely important in the development of Eddie's academic program. It is essential for the tutor working directly with disabled reader to make careful daily observations which can lead directly to program modification or continuation. When specific methods are tried for short periods of time without such documentation, they may be dismissed prematurely. Conversely, one particular method may be used over and over with a disabled reader, even when the child is not learning. Neither of these alternatives is effective, but careful documentation can indicate when and how to modify or continue the remedial program. Such an approach is described in more detail elsewhere. (See Deno and Mirkin, 1977 ; Morsink, Thomas, Hill, and Tarleton, 1978).

Research Base

There is an extensive research base for the techniques used with Eddie and/or recommended for other children with similar reading problems. Two aspects of this research base are presented below: (1) a summary of the most recent studies on how children learn to read (based on the work of Hiebert, 1981), and (2) a discussion of the way in which particular difficulties, termed "correlates" of disability, may interfere with this learning process. The research base is presented in the context of the historical controversy about how children learn to read.

Historical Perspective. The controversy over how children learn to read and why some of them do not learn has been raging for decades. The classroom teacher, confronted with this controversy, is likely to be quite confused and/or convinced that there is no "right way" to teach reading. Prior to the Revolutionary War, early reading instruction stressed learning of the ABC's. About 1849, teaching by using the "whole word" method was in vogue. The 1880s brought a return of phonics instruction, followed by a long cycle of whole word instruction and still another reexamination of phonics in the 1930s (Cordts, 1965, p. 192). The International Reading Association's definition stresses reading as a means of gaining meaning from printed words. This implies that reading is part of the whole communication process, that it involves total language development--speaking, listening, thinking, associating, comprehending, and so on. The translation of this definition into a workable instructional program for any given handicapped child, however, is highly complex, as the case of Eddie illustrates.

Current Perspective on How Children Learn to Read. Most recently, the theoretical construct of reading has taken a "functional approach," as described by Hiebert (1981). The following subsection is abstracted from Hiebert's work by permission.

> There have been many exciting developments in linguistics and cognitive psychology within the past several decades which have broadened the view of language learning. From these developments comes a functional perspective of reading acquisition (p. 63).

Summarizing the work of Cazden (1976), Lewis and Freedle (1972), and Halliday (1975), Hiebert points out that language is acquired in social contexts and that communication is a functional skill. Hiebert continues:

> While there are some obvious differences between the forms of written and oral language as well as between their respective acquisition processes (Kavanaugh & Mattingly, 1972). the role of function is equally applicable to both (Smith, 1977a). Both written and oral language serve various functions in society. Harste (1980) has suggested that the process of reading acquisition parallels that of oral language acquisition. That is, in their natural, ongoing encounters with life, children are exposed to people using written language. Through these meaningful encounters, young children gain information about print. An emerging literature confirms that young children use cues from the environment to give meaning to print within naturalistic settings (Bennett, 1972; Goodman & Goodman, 1979; Harste, 1980; Hiebert, 1978, in press; Ylisto, 1967). Many young children, at least from middle-calss populations, also acquire specific information about speech-print correspondences as a result of these encounters with print (Hiebert, in press; Mason, 1980). Some preschoolers even become proficient readers through these environmental experiences (Clark, 1976; Durkin, 1966). However, most young children do not acquire formal reading proficiency as a result of this naturalistic exposure; they instead make the transition to formal reading in the school setting.
>
> There is reason to believe, however, that an understanding of the functions of print gained from these naturalistic experiences may underlie success in beginning reading instruction. Smith (1977b) has argued that this functional understanding is particularly necessary given the abstractness of the beginning reading task in many instructional programs. Frequently, educators view the beginning reading task as a decoding one. The elements of language are extracted in this early instruction, that is, removed from any meaningful purpose or context. To illustrate, many beginning programs instruct children in speech-print correspondences by focusing on single, isolated sounds which have no meaning in that setting. According to Smith, unless children have some understanding of print and its functions, they will view this task as incomprehensible.
>
> Support for the suggestion that an understanding of the purposes and meaning of print underlies reading acquisition comes from a number of writers. From Vygotsky (1962) and Huey (1908) to Downing (1972) and Wadsworth (1978), writers have described the abstractness and lack of utility of the school reading task and have cited these characteristics as major stumbling blocks to children's reading acquisition.

> There is empirical support for the importance of a functional understanding as an underpinning of reading acquistion. A number of investigations have shown that poor and good readers at the same grade levels differ in their perceptions of what reading involves. Poor readers tend to view the reading task primarily as a decoding process, while their more capable counterparts view it as a process of deriving meaning from the passage (Canney & Winograd, 1979; Johns, 1970, 1974; Myers & Paris, 1978; Tovey, 1976) [Hiebert, 1981, pp. 64-66].

What might be inferred is that at least one of the things poor readers need to learn is how to view reading as a process of obtaining meaning from print. This was a major objective of the special program designed for Eddie.

Correlates of Reading Disability. In the early 1960s, Bateman (1964) suggested that special difficulties often associated with reading disability should be viewed as "correlates," rather than as underlying causes. This implies that these correlates need to be acknowledged and that programs for children who have difficulties require special adaptation. It should not imply, however, that handicapped children in whom these correlates have been identified cannot learn to read. Correlates that are often cited include poor attention, discrimination, and memory, difficulty in sequencing and in associating print with sound.

Research suggests that many children with serious reading problems are distractible. They find it hard to focus their attention and to follow the line of print in a left-to-right direction (see Cruickshank et al., 1961, p. 4, 5, and 10; Strauss and Lehtinen, 1947, p. 25). Studies of disabled readers also suggest tht many of them seem confused by words which look or sound alike. They often show inattention to details or get "hung up" on irrelevant details, (Stauss and Lehtenen, 1947, p. 30,63; Cruickshank, p. 147, 1961) and sometimes find subtle differences in sound hard to hear (Wepman, 1960).

In addition, disabled readers may not be able to recall sights and sounds automatically the way "normal learners" do. Kass (1963), using the Illinois Test of Psycholinguistic Abilities, discovered that they are likely to show deficits in the "automatic level" of functioning rather than in higher-level learning skills. That is, they may not remember a sequence of patterns they have seen or heard; they may not be able to recognize a whole word or object when a part of it is missing; they continue to use language forms (plurals, sentence structure, etc.) incorrectly long after others with comparable education and background have mastered them. Batemann and Wetherell (1965) have found the same pattern of deficits in mentally retarded children, many of whom also have serious problems in learning to read. Many disabled readers also seem unable to combine the separate parts of the word into a unified whole. For them k-a-t just says "kah-aaa-tuh" and never "cat." (See Johnson and Myklebust, 1967, p. 173-175). In one interesting experiment, so-called dyslexic children were readily taught to read English words written as Chinese characters (see Rozin et al., 1971). The authors of this experiment suggest that the abstract nature of the phoneme, the unit of sound in our language, contributes to the difficulty of the child in recalling it and in combining phonemes into word patterns.

Of course, decoding also involves translating print into oral language. This seems to be where disabled readers have the greatest difficulty. Johnson (1969) suggests that though they may be able to perceive and remember, many disabled readers cannot associate printed symbols with sounds. Birch and Belmont (1964) have found that many of these children can not integrate sounds with forms even when the sounds are pencil taps and the forms are dots and dashes. Rabinovitch (1968) terms the difficulty "symbolization" and explains that it means "letter forms and combinations cannot be translated into meaningful wholes . . ." "The difficulty is in the translation of sounds into letter symbols."

In addition to the possibility that a disabled reader may have any or all of the above "decoding" difficulties, there is a further complication--the nature of the code itself. The English language seems so inconsistent in its sound-symbol structure that George Bernard Shaw once said it was possible to spell fish "ghoti" (/gh/ as in enough, /o/ as in women, /ti/ as in motion). Of course there are rules, and English is an alphabetic code (see Burmeister, 1968; Bailey, 1969), but the disabled reader may not think so.

It might be inferred that the teacher needs to understand both the correlates of reading disability and the special problems inherent in learning to decode English print. These understandings, viewed in conjunction with the research base on how children learn to read, provide essential background material for the classroom teacher.

It might also be inferred that the teacher needs to view remediation of reading disability as a collaborative effort with other professionals. This author has previously been involved in a great deal of research on the decoding aspect of reading disability. A series of studies conducted over a ten-year period resulted in the development and validation of a special set of skill-based instructional materials for disabled readers. This program, entitled DELTA (Morsink, 1977), includes a teacher's manual which documents the need for intensive direct instruction provided by well-prepared teachers. The inference is that reading instruction for disabled readers should be provided by specialists, and that the classroom teacher should serve an important supportive role. Schenkat (1979) has conducted surveys which suggest that training in the teaching of reading presently given to elementary and to resource teachers-in-training is quite different, with the elementary teacher learning to provide developmental instruction and the special education major learning to take a remedial approach. The inference from the case of Eddie, as well as the research base, is that these roles should not be changed. But perhaps the roles should be enhanced, clarified, and made more compatible.

Math Case Study: Susan

Susan rarely handed in any math papers. For the first week, I thought she just worked very slowly and she was too shy to ask for help. Then one day we had a timed flash card contest on the multiplication facts. She missed her question and started to look blank. Jerry, who was next to her, tried to whisper the answer in her ear, but she would not say anything. She just started to cry.

I decided not to ask her to perform again in public on math. I began to monitor her daily performance in math and insisted that she hand in a math paper every day even if not finished. I graded only the ones she had finished. Sometimes that was only three or four, and I helped her unobtrusively as I moved around the room in "quiet time."

Then one day in March she handed in a whole set of papers that were nearly perfect, only one error in math, excellent handwriting, spelling all correct. Susan's name was printed on the papers and I was so eager to reinforce her that it never occurred to me that they might not be hers. During our circle, I handed back her papers with a sticker on them and told everybody how super her work was. Later, Linda came up to me and said, "These are mine. Look, my name has been erased." I could not be sure of what had happened, so I did not confront Susan, nor did Linda, but Susan looked awfully uncomfortable. I wondered whether Susan wanted praise and recognition so much that she would have cheated to get it.

Susan had been referred for possible special class placement during the previous semester. Testing indicated that her overall academic performance was about a year below grade placement. She had failed first grade and missed a lot of school because of illness. Her reading performance did not indicate a need for additional help since she was making good progress in reading. Her achievement test score in general information was very low. In math, she scored poorly in subtraction with borrowing and in word problems. She also scored zero in multiplication, although it had been introduced to her at the time she was tested and the other children were doing well in it. She was able, on the math test, to identify the signs for addition, subtraction, multiplication, and division operations, although observations of her performance indicated that she really did not understand the procedures they signalled.

Illustrative Classroom Practices

Susan was given some special help in math. All of it took place in the regular class. There were several techniques used which helped Susan in math: (1) Sometimes she worked with the entire group and sometimes with a small subgroup using concrete materials to solve problems, or "acting out" thinking problems. (2) Several other students tutored her in various math operations. (3) I reduced the number of problems she had to complete but still insisted on accuracy. As she improved, I slowly increased the demands. (4) By watching her work and asking her to "tell me what you're doing" I discovered that she had some rather unusual, but easily remediable, difficulties on which we worked individually.

Concrete materials and activities were used often in math class for the whole group. We often "acted out" our thinking problems as, for instance, in this problem. "Four kids. Each has two milkshakes. How many milkshakes in all?" I chose four students to act out the problem and handed each of them two imaginary milkshakes. The other students counted out loud to find the answer. Finally, I asked a volunteer to tell how to write the problem. Four times two, two times four, or two plus two plus two plus two were all acceptable answers since there are different ways to solve the problem.

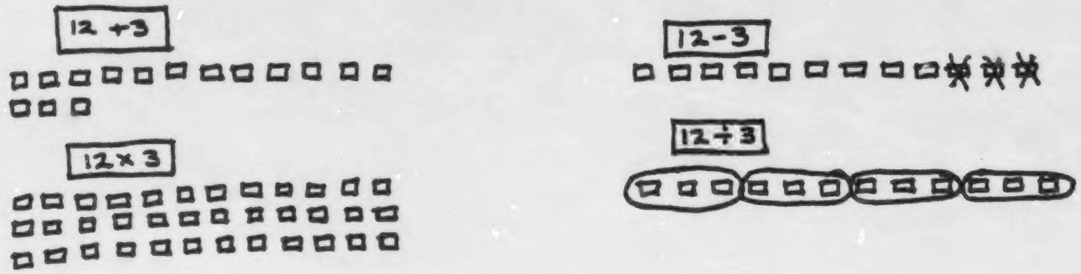
Sometimes the students were asked to read the problem, then estimate the answer before acting it out to confirm their answer. One such problem was, "Uncle Andrew had 15 dollars and wanted to give the same number of dollars to each of his three sons. How much would each of them get?" Each child estimated privately and wrote his/her answer on paper. Then a child designated "Uncle Andrew" was asked to divide his 15 play money dollars among the three children who represented his sons. The fun of this game was the students' opportunity to cheer for themselves when the acting out confirmed the correctness of their estimates. (Of course they were shown how to "cheer" silently by raising their arms with clenched fists above their heads and opening their mouths in noiseless mime.) As she practiced, Susan began to cheer for herself more and more often.

I often worked with Susan in a subgroup of students who were directed to draw pictures of the problems they had to solve, such as: "Three kids, each gets five candy bars. How many candy bars?" Or, "Three song books, nine singers. How many share each book?" This technique was helpful to her but not as effective as acting out the problems.

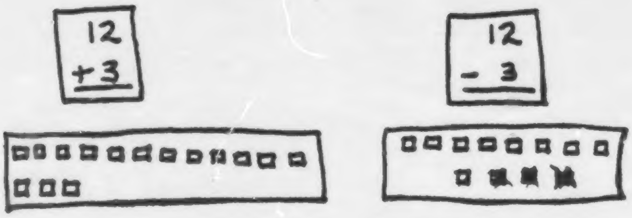
Often Susan manipulated concrete objects in problems involving measurement. She was in the small group learning to tell time with real clocks and was successful in learning to tell time to quarter hours. She also learned to change liters to half liters by pouring water into containers. When she figured out the "rule"--there were 2 times as many half-liters--she grinned.

Special tutors often worked with Susan, using special methods. The first time she had a tutor it was because she had been absent the day before. Joanie and Sarah, who had passed competency on grams and kilograms, were selected to tutor him in metric measurement. The tutors sat at my desk with Susan and used concrete materials from the metric kits. They asked her to hold the gram weight (a small plastic disc) in one hand and the kilogram (a metal piece as heavy as a hammer) in the other. They encouraged her to lift the weights before she answered questions such as, "Does a pencil weigh about 5 grams or 5 kilograms?" She did very well on this and enjoyed it. The next day she passed the competency test on grams and kilograms, without the weights. Student tutors also used color-coding to help her understand borrowing in subtraction. I had cut an old worksheet into strips with 4-5 problems on each strip. Susan and other students who were having trouble in borrowing were given one of these strips each. All had tutors and each tutor wrote one of the problems on the board with colored chalk. The numbers in the ones column were written in green, and those in the tens column were written in red. The tutors watched as the tutees solved their problems. Susan responded well to these visual clues and solved her problems correctly.

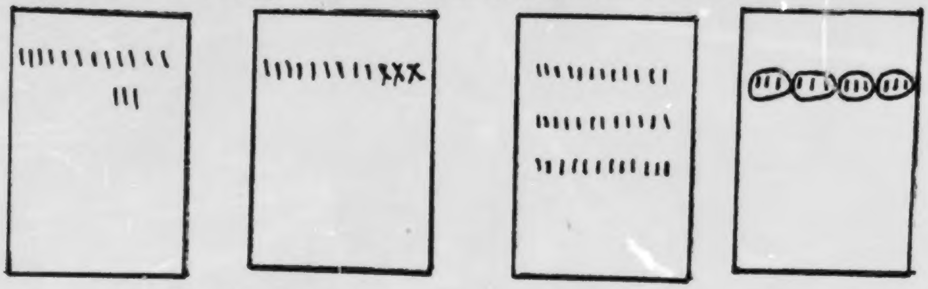
Direct observations of Susan's work helped me to pinpoint some unusual but easily remediable difficulties with which I was able to help her. She had difficulty, for example, in understanding the meanings of signs--(+), (-), (x), (÷). Susan did not seem to understand that the signs in math problems were signals for different operations. When she looked at the problem 12 + 3 = (or $\begin{array}{r}12\\ \underline{+\ 3}\end{array}$) she sometimes wrote 15, or 9, or 4. In order to help her understand the meanings of these signs, I gave her a set of index cards and the box of blocks and showed her how to use the blocks to set up and solve each of the four problems as follows:



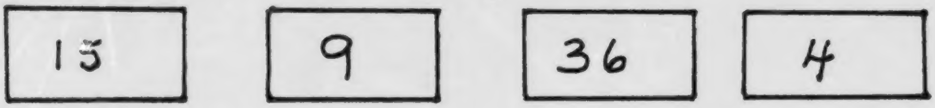
Next, Susan was given a set of 20 more index cards--one each with the same problem in the vertical format, rather than the horizontal, one each with pictures of the block solutions.



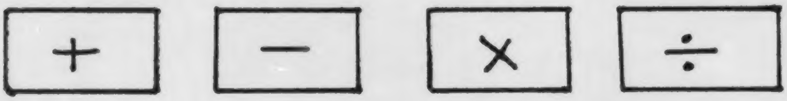
--one each with tally marks representing the block solutions,



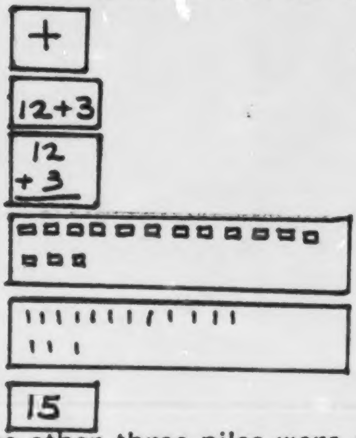
--one each with the answers,



--and one each with the signs representing each operation.



She was asked to sort the cards into piles. The "+" pile had



The other three piles were completed in the same way.

Then Susan was given a worksheet with two other sets of problems of the same kind.

8 + 4   8 − 4   8 × 4   8 ÷ 4

10 + 2   10 − 2   10 × 2   10 ÷ 2

She was told that she could use the blocks and the cards to help her solve the problems. Her score was 100% on this task. She kept the cards at her desk to use in the future and had no further difficulty with distinguishing signs for operations.

Early in the semester she was required to do only part of the regular assignment on a worksheet and from the book. As she improved, I increased the requirements. In early April she was one of the many students who did poorly on a math test. All were told to take the test a second time and to work more carefully. Susan scored 50% the first time and 88% the second. This improvement indicated that she was not only capable of better work, but also ready for undertaking more responsibility in math.

About the same time, the class took achievement tests. For the most part they were working conscientiously and they were fairly relaxed about what they were doing. Susan was making a real effort, and she did not cry when she could not do the problems.

By the end of April Susan was finishing her math, the shortened version of the assignment, most of the time. By May I could see that she had made great progress. I continued to record scores in math and saw that Susan was scoring rather consistently between 80% and 100%, usually closer to 100% on the shortened assignment. I was pleased with her progress.

Of course, Susan was reinforced for her progress in math, just as Eddie was in reading. By April she had won a couple of paper badges for mastering the two's and five's, which meant she could respond to each flash card in less than 5 seconds. The badges were adapted from the Monster Math Series.

Susan was also reinforced for success in other areas while she got help in math. For example, she was a tutor in reading. She showed the other students how to complete some of their worksheets, and she often won a "superstar" in reading group by reading accurately and demonstrating good comprehension.

She was also reinforced for improvement in spelling. When she missed only four words out of fifteen on the weekly test, she won a sticker on her spelling paper. During a spelldown she missed a word and went to the end of the line but did not cry. She got her next word right, and everyone applauded. Emerging from her "shell," Susan discovered that the other students liked her. She won a flag for good behavior, was chosen as the "checker" because she completed all her work, and was asked by the popular girls in the class to sit near them.

Implications for Teacher Education

Susan's case illustrates some of the problems encountered by many elementary school children who have difficulty in learning math. It shows why the classroom teacher needs to understand both the nature of arithmetic disability and the characteristics of materials which have been used effectively to teach math to elementary school children.

Two issues with implications for teacher education will be presented briefly below: (1) What inferences might be drawn about the effectiveness of the methods used with Susan in this classroom? (2) What is the research base supporting the need for and nature of the knowledge, skills, and attitudes in this area which seem important for teachers to acquire? In the whole chapter summary another issue will be raised for all three areas (reading, math, and language). (3) What issues might the present study and related literature indicate to be important ones for further study?

Effective Practices Used in the Classroom. The conceptual bases for three of the techniques used effectively with Susan are presented in abbreviated form below. These are as follows: analysis of the interactive (teaching-learning) unit, teacher observation of student errors, and remediation of learning disabilities which may affect performance in math.

Interactive Unit. Cawley and his associates at the University of Connecticut have done a great deal of research on math achievement in handicapped children, with their work culminating in the development of Project MATH (Cawley et al., 1976)--Math Activities for Teaching the Handicapped. The essence of this program is its use of the "interactive unit" which describes what teacher and learner do in math activities.
The teacher may:
    --construct (manipulate concrete materials)
    --present (show, as in a picture or display)
    --state (explain briefly)
or --graphically symbolize (write down).
The learner's response may be to:
    --construct (manipulate concrete materials)
    --identify (point to, or show response)
    --state (say verbally)
or --graphically symbolize (write down).

For every subskill or instructional objecting, it is possible to have sixteen different interactive units. A child who cannot seem to grasp the concept when the teacher gives a verbal explanation and requires a written response, for example, may be able to perform quite well when the interactive unit is construct→construct, or construct→identify. This was true in Susan's case, and the student tutors who worked with her were taught to use the "present" or "construct" mode when she did not understand their verbal explanation. Some of the most interesting of the learner's responses in the "construct" mode are those developed for Project MATH in the area of verbal problem solving. These techniques are designed for use in group instruction.

Observation of Errors. A second conceptual base for Susan's program was taken from the work of Buswell (1926), who recommends that teachers observe children as they work in math in order to analyze the types of errors they make. The importance of learner observation can be shown in the following example:

$$\begin{array}{r} 16 \\ +\ 7 \\ \hline 31 \end{array}$$

Is the difficulty a) not knowing basic facts?
b) need for instruction in regrouping?
c) something else?

Looking at the written product only, the teacher would not be able to determine the type of error the child had made; by watching and listening to the child perform, the teacher can develop insight into the nature of the problem. Suppose the child says, "6 + 7 = 13" and writes ""31," a reversal of 3 and 1. The child overlooks the "1" in the tens column completely and writes the answer "31." Drill on basic facts here is not necessary, and instruction in regrouping may not be needed. Susan's case indicated a similar problem. If I had not observed, I might have drawn the erroneous conclusion that she wrote 12 ÷ 3 = 9 because she did not know the division facts; actually she did not understand the symbol (÷).

Learning Disabilities. This point also illustrates the need for teachers to understand identification of learning disabilities which may affect performance. Johnson (1979) suggests that there are eight learning disability types which interact with curriculum to create problems. They are as follows:

1. Memory
2. Visual-auditory discrimination
3. Visual-auditory association
4. Perceptual-motor
5. Spatial orientation
6. Verbal expression
7. Closure-generalization
8. Attending.

Johnson has outlined remedial procedures for each disability type within each arithmetic curriculum area. Susan's disability, for example, might be classified as visual-auditory association, as demonstrated by her difficulty with understanding the meanings of symbols (+,-, x, ÷).

The implication for teacher education is that a teacher who does not have the ability to adapt the math curriculum to the special child's needs may give up in frustration or provide the wrong kind of remedial help for a child like Susan.

Research Base. There has been less research on difficulties in math than there has been on reading disability. Presented below is an extremely brief discussion of some possible learning difficulties, as well as an explanation that teaching math to mildly handicapped children is in many ways similar to teaching math to "normal" learners.

Learning difficulties in math may be present in children like Susan who do not qualify for special education, or in those whose test scores do justify special placement. The work of Johnson (1979) focuses entirely on learning disabilities and arithmetic. It will be summarized later in this chapter. Lerner (1976) has suggested that there are several broad categories of math-related learning difficulties:

1. Disturbances of spatial relationships.
2. Disturbances of visual-perceptions and visual-motor association.
3. Poor sense of body image as it may relate to lack of number sense.
4. Poor sense of time and direction.
5. Possible relationships between arithmetic abilities and social maturity and social perception.
6. Arithmetic problems caused or compounded by reading handicaps (pp. 25-26).

Hammill and Bartel (1974) suggest that problem factors for LD children include, in addition to ineffective instruction:

1. Perceptual problems (geometry; space, time words)
2. Directionality (number line, negative numbers)
3. Difficulty in abstract/symbolic thinking
4. Memory problems
5. Reading difficulties.

Fitzmaurice (1974) states that the mentally retarded child's limited ability to abstract and generalize is a major problem in math instruction, and also that the MR child may have poor memory, may perseverate (repeat the same inappropriate response over and over), or may have reading difficulties which contribute to problems in math.

While it would be an error to conclude that any given mildly handicapped child's difficulty in math can be explained on the basis of any or all of the above factors, it is nevertheless important for teachers to be aware of their existence.

"Normal" learners have many of the same difficulties in math as do mildly handicapped children. It goes without saying that all teachers should understand the basic processes, operations, and real-world applications of math, as well as understanding how children learn mathematical concepts. Only two principles will be described--the need for manipulation of concrete objects, and the importance of a sequential curriculum.

Nearly all beginning math programs include a number of experiences in classifying, ordering, comparing, and manipulating concrete objects. The Developing Mathematical Processes (Rand McNally, 1974) program is illustrative of a comprehensive elementary math program based on the manipulation of a variety of concrete objects; Structural Arithmetic (Stern, 1965) and the Cuisenaire (Davidson et al., 1971) blocks utilize wooden rods of varying lengths to help children visualize arithmetic operations; the SRA Math Learning System Kit (DeVault, M., et al., 1974) provides supplementary materials for concrete experiences. All these programs are based on the developmental learning theories of Piaget and others, which stress the need for children to learn by doing. This experience is even more important for children with learning difficulties, who can use such "regular class" materials, provided the pace of instruction is not too fast.

Another important feature which should be present in "regular" math programs used with special children is a well-conceptualized scope and sequence of skills. In the area of operations, for example, the adding sequence might be:

--adding two 1-place numbers with sum of less than ten
--adding two 1-place numbers with sum greater than ten
--adding 2-place numbers plus 1-place numbers with no carrying
--adding two 2-place numbers plus 1-place numbers with no carrying
--adding two 3-place numbers plus 1-place numbers with no carrying
--adding one 2-place number and 1-place number with carrying, etc.

It is essential for special children to learn one thing at a time and to have mastered prerequisite skills. The procedure for using a math sequence, then, is to identify the special child's place in this sequence and to begin instruction at that point. Many school districts have developed their own scope and sequence charts in math, often with accompanying diagnostic tests (see for example, Fayette County Public Schools, 1977). What follows is the sequence of skills for the third grade, according to the Fayette County Progress Profile (Figure 3).

In school districts which do not have a test based on the scope and sequence of their math program, teachers can determine children's instructional needs by preparing a CBA--curriculum-based assessment (see Blankenship and Lilly, 1981). Since the CBA is time-consuming to prepare but extremely useful, it might be done by a group of teachers, each of whom prepares a small portion to share with the group.

Figure 3

FAYETTE COUNTY PUBLIC SCHOOLS
DEPARTMENT OF INSTRUCTIONAL SERVICES
Division of Secondary Curriculum and Instruction
701 East Main Street
Lexington, Kentucky 40502

CONTINUOUS PUPIL PROGRESS PROFILE IN MATHEMATICS

DIRECTIONS TO THE TEACHER: These profiles are to be used as a continuous record of the pupil's progress in mathematics. As each skill is taught record a check mark in the "Introduced" column. After testing of this skill, check the "Needs More Work" column if the need for reteaching is indicated. If a student has demonstrated proficiency, write the date in the "Mastered" column.

	Introduced	Needs More Work	Mastered
46. Subsets			
47. Missing addend, subtraction			
48. Read/write numerals through 999			
49. Place value to thousands			
50. Addition with renaming			
51. Subtraction with renaming			
52. Line segment, line, ray			
53. Measure meters, decimeters, centimeters			
54. Roman numerals through XXX			
55. Add/subtract amounts of money			
56. Subtraction involving zeros			
57. 2- or 3-step word problem, add/subtract			
58. Measure mass to nearest kilogram			
59. Measure volume with litre container			
60. Unit name for cm, cm, m, kg, l			
61. Measure temperature Celsius			
62. Odd, even			
63. Multiplications facts through 5's			
64. Division facts through 25 ÷ 5			
65. 0 as addend; 0 or 1 as factor			
66. Identify sphere			
67. Identify cube			
68. Multiply 2-digit numbers by 1-digit numbers			

Written Language Case Study: Bill

Bill was a year older than the other students and he was also large for his age. He was viewed as the classroom's biggest and strongest boy. He had had academic difficulty since kindergarten, was retained in first grade and tested in second grade. He had been in the EMH resource room all year, receiving about two hours of special help per day in all basic subjects. He also participated in both the developmental and remedial reading groups in the regular classroom, in addition to joining us for physical education, music, art, science, social studies, lunch, and recess. His progress in reading and math was slow but steady. He received special instruction in these areas, as well as in written language, in the resource room. Like Eddie, he was present in the regular classroom for 45 minutes early in the morning when assignments were given and seatwork explained, and for an hour late in the afternoon. He was often oblivious to activities around him and tended to wander around the room unless programmed to stay on task. He was good in sports and generally got along well although he sometimes engaged in fights.

Bill's scores were low overall, averaging about two years below grade placement. His self-concept may have been expressed in his comment, "I don't learn stuff.. I'm just outside playing." He was pleasant and cooperative, strong in common sense and general knowledge, but weak in comprehension, rote memory, numerical reasoning, and planning. He had difficulty with seeing part-whole relationships. He wanted to please but usually gave up when tasks were hard, and he needed great amounts of encouragement. He could add numbers up to 10, but could not subtract, and he could not tell time or count beyond 25. He was still using manuscript writing although he could write his name in cursive. He could spell a few CVC words which were emphasized included in his remedial reading program but had not been exposed to the regular spelling program or to the classroom language program.

Illustrative Classroom Practices

Two kinds of classroom practices used with Bill are described briefly below: (1) those which emphasized areas other than written language, and (2) those designed to help him in the written language areas of handwriting, spelling, and the mechanics of writing (usage, capitalization, punctuation, etc.).

Bill's classroom reading program was developmental--covering all skills at the 1-2, then 2-1 level, included in the series adopted by the district. There were six children in this reading group, and all received the same kind of instruction--story-reading and discussion for comprehension, and a sequential test-teach-test program in decoding skill development. (This is described in detail in the next chapter.) He also received a second skill-oriented group remedial reading program from a Title I reading teacher who came to the classroom every day.

Initially, Bill's classroom math program was similar to that provided for Eddie (described earlier in this chapter). He received brief periods of instruction focused on subtraction and time-telling; he used the duplicated materials from Monster Subtraction and The Kentucky TIME Program. This program was a supplement to that provided in the resource room as prescribed by his IEP.

Like Eddie, Bill had a special folder for his seatwork. The major purpose for the seatwork activities was social and behavioral, rather than academic. It was essential that Bill have expectations for work completion in the regular classroom and that the other students see him handing in assignments to be checked for completion and graded by the teacher. It was also important to stop him from wandering around the classroom by requiring him to complete work within time lines and according to stated criterion levels. The task completion expectations were stated to him each morning as I spent five minutes with him "going over his work."

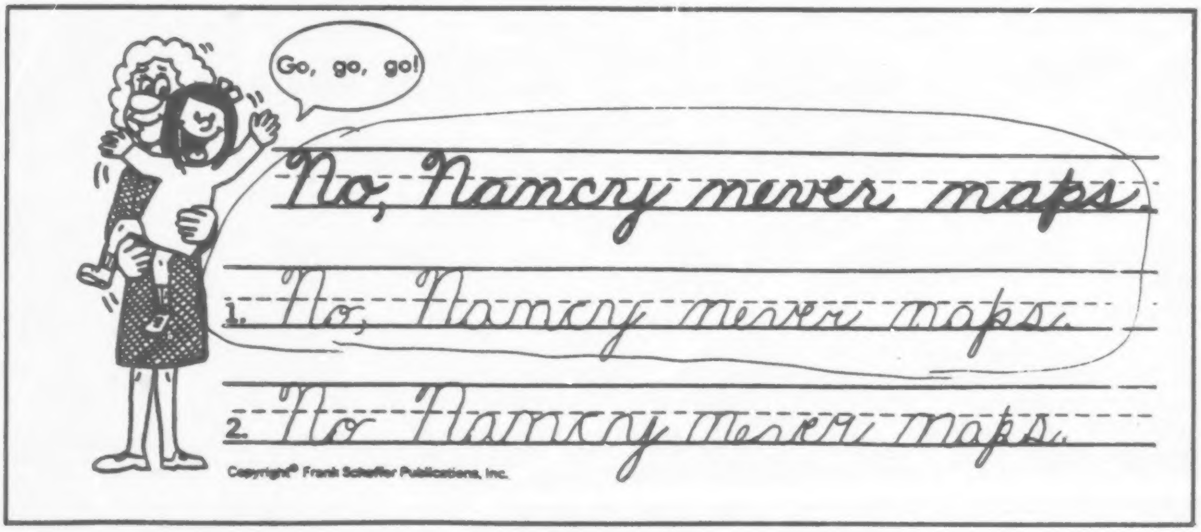
The written language program for Bill was essentially an extension of the "brief explanation followed by worksheet completion" format he had in math. It consisted of activities in handwriting, spelling, and writing mechanics (capitalization, punctuation, and so forth). Bill's written language program was partially successful, as indicated below.

Handwriting, for all children in the class, featured a "task analysis" approach. An example follows (suggested by Susan Henry):

> Terminal objective - given notebook paper and pencil the student will be able to write at least three sentences, (on a given subject) making each letter distinguishable from others and making each word recognizable in isolation, with 85% accuracy whenever he may be presented with this task (spelling, reading, written communication)
>
> Task analysis of objective - Integration of basic handwriting requirements (posture, grip, pressure). Proper slant of each letter, correct size of each letter, correct formation of each letter, suitable spacing between letters and words, write each letter /word on the line.

Bill responded well to handwriting instruction. He progressed from sloppy manuscript early in the semester to beautiful cursive, as illistrated by this example from the "Harvey Hippo" materials (Schaffer, 1980). (See Figure 4.) Bill won several pencils for good writing. These were given to children who earned all "E's" in writing for a whole week. He also won a giant pencil at the end of the year for having made the most improvement in writing.

Figure 4


Go, go, go!
No, Nancy never naps.
1. No, Nancy never naps.
2. No Nancy never naps.

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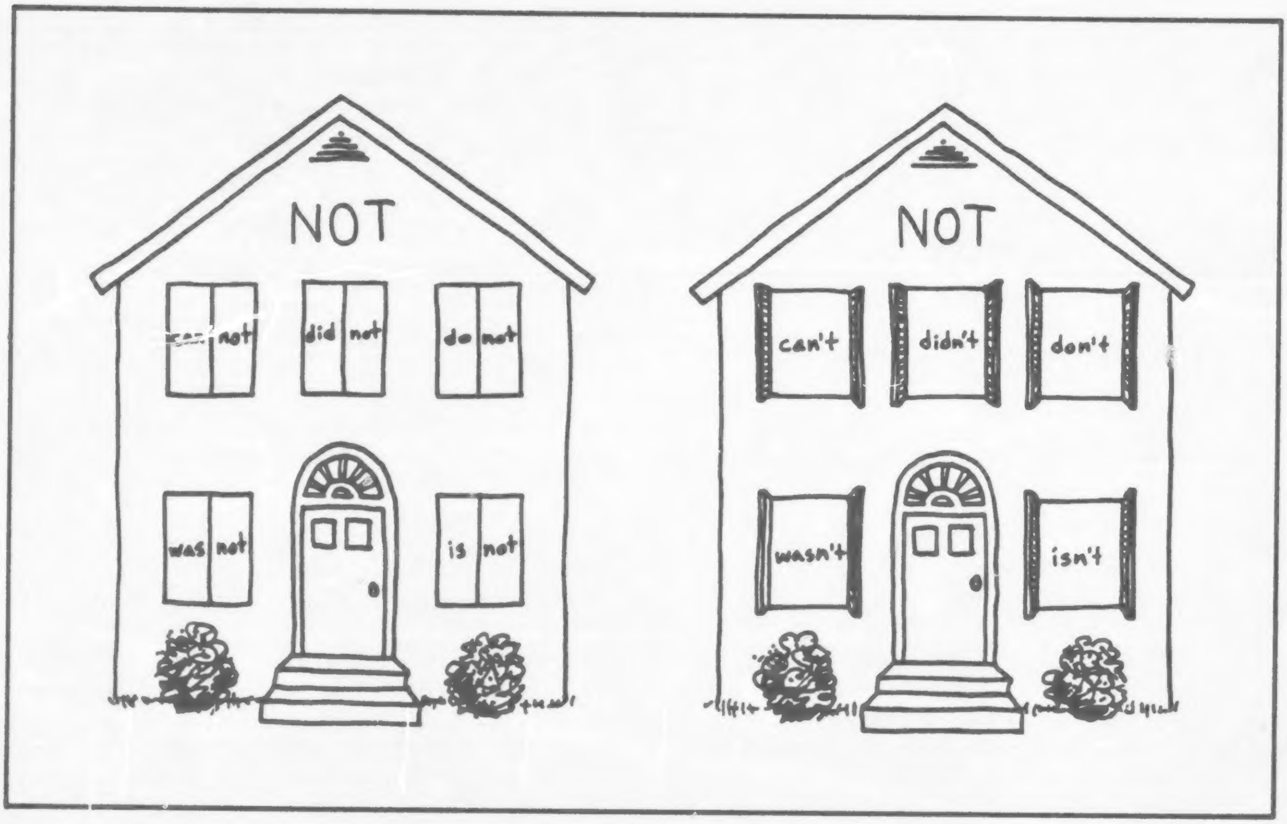
Spelling was a different story. All of my attempts to adapt the regular spelling program to Bill's needs failed completely. He was able to learn five (rather than fifteen) of the week's words and retain them for about five minutes if he studied the words and then took the test immediately. He could not, however, remember them the next day. We tried Fernald word tracing, typing, and both the "visual" and auditory" learning methods (described in next chapter) which were so successful with others, including Jerry and Susan. Even after five days of study, practice, and daily testing, he still missed all of the five words he had chosen.

He experienced success in spelling only in the patterned approach (word families, such as "fell, bell, well, tell") which matched the decoding program he used in the resource room for reading and writing as well as spelling. Since he did well in this program, and it was not aversive to him as it had been to Eddie, it was clearly the method of choice. In Bill's case, the benefits of giving him a "less restrictive" program were outweighed by his need for and success with the decoding approach emphasizing heavy structure. And, in Bill's case, it appeared important to heed the psychologist's caution about weaknesses in rote memory and whole-part relationships.

Writing mechanics (usage, capitalization, punctuation, etc.) were the focus of the regular language program in the classroom. Two or three days a week (Tuesday/Thursday, Monday, Wednesday, Friday) the whole class was given nine tests covering one language subskill. It might consist, for example, of sentences in which the child was to fill in the blank with "saw" or "seen". It should be noted that the sentences were read aloud on tape before the children took the test in order to give the poor readers an equal opportunity to respond. After grading the test, the teacher could determine which children had mastered the skill (scores of 90% or better) and which ones needed additional instruction. Those who had not passed the test were grouped together for additional instruction on this subskill the following day, and then re-tested for mastery.

One of the most successful language lessons for Bill was the one on contractions for the DELTA kit (Morsink, 1977). One of the other children made him a paper house, as described in DELTA, skill B-10, to help him with contractions. Contractions were written on the "windows" of the house, while the whole words from which they are made were written on the "shutters." (See Figure 5.)

Figure 5



Bill's progress was not entirely smooth, of course. By early January he was beginning to hand in all of his work, correct and complete. Then he stopped completing his language assignments and did not hand them in for a couple of days. It looked as though he were reverting to old habits, giving up when it got hard. When this happened the third day in a row, I kept him in for recess. He cried and complained, but he finished his work correctly.

The next day Bill's performance was the highlight of the day. He answered two questions correctly on the language tape and completed the follow-up assignment without errors. His math was perfect, his writing was beautiful, and he never left his seat inappropriately. I showed his papers to the class in our end-of-afternoon circle, and they all applauded while Bill beamed. He was awarded the tiger card (a picture of a tiger), while the class and I said, "Grrreat!," and he was given the privilege of being the checker for an hour the next day.

Implications for Teacher Education

Bill's case illustrates the problems encountered by many elementary school children who have difficulty in learning written language. It is an example of why the classroom teacher needs to understand both the nature of written language disability and the characteristics of materials which have been used effectively to teach written language to elementary school children.

Two issues with implications for teacher education will be presented briefly below: (1) What inferences might be drawn about the effectiveness of the methods used with Bill in this classroom? (2) What is the research base supporting the need for and nature of the knowledge, skills, and attitudes in this area which seem important for teacher to acquire? In the whole chapter summary another issue will be raised for reading, math, and language. (3) What issues might the present study and related literature indicate to be important ones for further study?

Effective Practices Used in the Classroom. There seem to be some similarities in the practices used effectively with Bill and those used effectively with Eddie and with Susan. The most generic statement that can be made is that it was essential for me to adapt the level of instruction and to allow him to respond in a different mode in order to enable Bill to function in the regular class program. This adaptation does not mean, however, that no demands were placed on him; indeed, the opposite was true. Bill, like Eddie and Susan, was held accountable for failure to perform as he was capable, and the enforcement of accountability increased his level of performance. For Bill, as for Eddie, the contact between regular and special class teachers and the provision of a consistent academic program were also important. This contact did not apply to Susan since she was not in a special class.

For Bill, as for the other two children, I believe that reinforcement of appropriate behavior and of academic progress was a factor in his acceptance by the class and in the improvement of his self-concept. Also, the need for "scientific" methodology--careful observations and evaluation of effectiveness--was apparent in his case, as in the other two. This latter factor was just as important in making decisions about when to change the child's program as it was in the documentation of effectiveness.

Research Base. The following summary of research is abstracted from Nelli (1981). Nelli has completed an extensive review of the literature on teaching spelling and writing skills in the mainstreamed elementary classroom. She has indicated that several group management and teaching strategies are advocated consistently.

> Classroom management strategies included individualizing of instruction, skills and/or achievement level grouping, diagnosis and prescription, environmental modifications, and program planning.
>
> Classroom teaching strategies most consistently advocated were peer tutoring, learning games, use of various media, team teaching, and motivation strategies related to the specific tasks of spelling and/or writing (pp. 81-82).

In regard to spelling, Nelli has concluded that there is a great deal of support in the literature for peer-tutoring and for the use of media and games as instructional devices:

> Groff (1973) concluded that the practice of locating little words in big words is particularly helpful to pupils with both reading and spelling problems. Urbani (1978) reported that magic markers are especially useful for highlighting specific sounds and letter blends within words. Parke (1979) found teacher use of exaggerated oral pronunciation and syllabication useful in helping many pupils study spelling words, particularly in group situations. The Creative Classroom (1978) suggested that the teacher reinforce pupils' listening and spelling abilities by slowly spelling aloud important classroom messages, pupils' names, relevant questions. In turn, pupils spell aloud simple responses.
>
> Musgrave (1975) maintained that most individual spelling needs are conceptual or phonic; hence the teacher must be prepared to deal with vocabulary growth, communication, and phonics in the spelling program. Siegel (1969), Wilson (1979), and Urbana (1978) also valued phonics training within spelling programs. Hardin (1978) devised a spelling approach based on phonics and memory. Groff (1979), however, found little evidence to link phonics with spelling needs. Cronnell (1978) advised teachers to differentiate between spelling-into-sounds and sounds-into-spelling skills. For many pupils, these are distinctly different activities.
>
> Kohl (1978) found that when he had pupils describe to him ways not to do spelling and writing activities in the classroom, they were motivated to find their own "best" ways to learn these skills. Owen (1974) reported that when pupils devised their own spelling drills, they were more likely to use them and to learn their spelling words. Both Owen (1974) and Harris (1978) achieved considerable success in fostering pupil attitudes toward, and success in, spelling skills by encouraging pupils to write classroom newspapers.
>
> Mangieri and Baldwin (1979) found a significant relation between pupil ability to spell words and ability to understand the meaning of these words. Dictionary skills--locating spelling words in the

dictionary, orally defining the words, writing the definitions, and preparing individual lists of problem words--were stressed by Owen (1974), Harris (1978), Roser and Jensen (1978), and Urbani (1978). Owen (1974) encouraged pupils to select their own weekly spelling words from a list provided by the teacher. Wilson (1979) trained pupils to generate their own weekly spelling words from those they needed to know, and to compile a list of potential words for future use. Negin (1978) presented findings supporting the use of mnemonic devices that improve pupil spelling ability by linking the difficult parts of words to the correct spelling (Nelli, 1981, pp. 84-86).

Nelli (1981) completed an extensive review of the media and games which have been used successfully in teaching spelling to mildly handicapped children. She indicated that the typewriter and tape recorder seem to be particularly effective and that activities such as interest centers and detective games seemed to increase the motivation of mainstreamed handicapped children.

Nelli (1981) also suggested that the literature includes a wide variety of instructional alternatives to the traditional Monday through Friday pattern of teaching spelling through basal tests. She indicated that there is considerable evidence to support the diagnostic, multi-sensory, positive feedback, and non-competitive collaborative spelling games approaches.

There is a less extensive literature base on the efficacy of methods of teaching handwriting than there is on teaching spelling to children with learning difficulties. Contributors to Haring and Shiefelbusch (1976) noted that consistent feedback from the teacher concerning the mechanics of handwriting results in improvement for many pupils. Nelli (1981) pointed out that teachers must recognize reality; some pupils never will develop beautiful handwriting, and ocntinued failure, particularly if accompanied by teacher criticism, will not improve their penmanship (Younie, 1967; Owen, 1974).

In the area of program planning for handwriting skills, Nelli (1981) cites the following research:

> Lowenbraun and Affleck (1976) outlined a five-step assessment process (p. 25) based on each pupil's skill in printing or writing every lower case letter, to be followed by a penmanship program for each pupil based on the letters with which that pupil is having difficulty. The authors stressed that all mildly-handicapped pupils should be given realistic penmanship goals consistent with their abilities, and suggested a specific sequence for teaching each group of printed letters: first, straight line letters (l, i, t); then straight line and slant line letters (v, w, x, y, z); followed by circle and curve letters (o, c, s); and finally, circle/line (a, e, d, b, j, g, q, p) and curve/line (h, k, f, m, n, r, u) letters.

Lowenbraun and Affleck also prescribed a pattern for the teacher to use with mildly handicapped pupils to facilitate their learning how to form each letter. First the pupil is to trace the letter on a solid line, then on a faded line, then on a dotted line. Next the pupil copies the letter, given the teacher's outline. Finally, given a verbal cue as to the letter to be formed, the pupil should be able to write that letter. The authors emphasized the importance of the teacher's modeling correct, consistent letter formation, as well as describing aloud the movements made ("up, down, across, down") as each model letter is written or printed on the blackboard (Nelli, 1981, pp. 95,96).

Issues for Further Study. At least five implications for teacher education programs might be suggested as issues for further study. These are synthesized from the observations of all three children across the subject areas of reading, math, and written language.

1. It will be important to determine what preservice teachers need to know about how children learn basic academic subjects. It would seem important for this knowledge core to have an historical perspective and a solid research base so that it is not limited to cyclical indoctrination in whatever learning theory is "in" at the moment.

2. Some appropriate revisions in the preservice teacher's liberal arts program might be considered. For example, should not the preservice program include instruction which would help teachers grasp the structure of the basic subjects through study of number systems, linguistics, and so forth? Obviously these components are thought to be already present in preservice programs. The missing link seems to be in the application of the knowledge to the practice of teaching children in classrooms.

3. An expansion of the teacher's repertoire of teaching methodology might be considered. If teachers are taught to implement only one type of program, what happens when they encounter a child for whom this method or material is not effective?

4. It also seems essential to explore the applications of careful observations and continuous measurement to instructional decision-making. (Are there ways to determine what method is appropriate for which child?) Can classroom teachers learn to evaluate instruction continuously and to make methods and materials decisions based on data, or should they learn how to interpret data-based systems implemented by resource persons in small-group settings?

5. It seems that most teachers are presently taught to "do their own thing" behind closed doors. A request for assistance seems almost equivalent to an admission of failure. How can preservice programs model and provide instruction in collaborative effort, such as teaming and the effective use of consultation, which seemed so essential in the programs of Eddie, Susan, and Bill?

Chapter Five

INDIVIDUALIZING INSTRUCTION

> All teachers should be competent in the assessment of the individual student's educational needs and in adapting instruction to the individual. Starting from the first week of teacher preparation, and continuing until its completion, trainees should be in the company of experienced teachers who individualize education expertly and of specialists who can help in diagnostic and instructional processes (Reynolds, 1980, p. 16).

Problem

Presently, classroom teachers are taught to work with children in groups. Usually these are whole "grade level" groups, determined by the child's chronological age and/or grade in school. The content of the curriculum for that grade is often the determinant for what the child should learn, and little consideration is given to the individual's starting level, prerequisite skills, or special needs. "Evaluation" is designed for grading, as a method to determine how well each child has learned the material which has been presented. When grouping is used, it functions essentially as a method of classifying students into high, middle, and low tracks, in which they tend to remain rather permanently. Even total individualization (if that is truly possible) may not facilitate learning, since it may result in a highly competitive situation, or one in which handicapped students would require a disproportionate amount of teacher time.

There is a need, then, for classroom teachers to learn to implement methods of individualized teaching which are feasible in terms of time and energy and are adaptable to large groups in the regular classroom. Four such methods are presented in this chapter: peer tutoring, mastery learning, data-based evaluation, and creative/innovative activities. The case studies which follow immediately below illustrate the range of problems which these strategies were designed to solve.

Case Studies: Carl, Mary Ann, Phillip

Carl and his older brother had enrolled in this school at mid-year. Carl never smiled, and he told me he did not have any friends. Sometimes he wandered around the room; sometimes he stayed in his seat and made weird noises while others tried to work. Often he just stared into space and he seldom finished his work unless prodded. No reward seemed enticing enough, and the only punishment that seemed to make an impact on him was staying after school. A daily log entry indicates his response to this strategy.

> Again, Carl hadn't finished his morning work by afternoon recess time. He had to take his work out on the playground and sit on the blacktop near the school wall and work while others are playing. He didn't finish then, either, and when school was dismissed,

> he still hadn't done his work. At that point, Carl broke into a flood of tears. His brother was waiting for him and he had to get home, he said. We talked for a little while about why he wasn't finishing his work. He decided that he needed some help in staying on target. We agreed that morning recess each day he was to have his writing and math completed. By lunchtime he was to have his language and spelling done. I told him I would check regularly, but he would have no privileges until he finished his work. I agreed that if he started to get his act together, we could "contract" for special activities like science experiments and art projects. I was really concerned about Carl because he was so bright and creative and had so much potential. But he had no friends and seemed unable to relate to anyone.

Carl responded to a combination of mastery learning and creative activities. He was also referred to the school counselor for some personal help.

Mary Ann had a visual impairment which was gradually worsening. She had been referred for special testing in first grade when it was suspected that she had a hearing loss or a learning disability or both. She had consistently low scores in all areas which involved comprehension, although her ability was average or above. Mary Ann, who was often highly distractible, held her books very close when she read or worked. Her learning "style" was quite "auditory." She spelled quite phonetically; she spelled appreciate, for example, "apresheate." Mary Ann responded to a combination of peer tutoring and data-based program modification.

Phillip had been in an LD class but was now functioning entirely in the regular class with the exception of speech therapy twice a week for articulation and disfluency problems. His assessment data indicated that math was a strength, but that he had trouble with regrouping and with recall of basic facts. His reading skills were also poor. He often could not recognize cursive letters, read short vowel words, or pronounce multi-syllable words. His former teachers stated that he "mixed up sounds and reversed letters, often lost his place, printed from bottom to top, grasped his pencil incorrectly, could not stay on the line." He also had a history of disturbing others, and crying or "blowing up" when things were difficult. Phillip's spelling and writing were extremely poor, although his comprehension was good. He needed a combination of all four individualizing strategies.

One of the major purposes of this study was to determine whether a classroom teacher could indeed individualize programs for mainstreamed mildly handicapped children. The procedures described here are those which survived the semester-long reality test. That is, they were both feasible in terms of teacher-time and effective in terms of student learning. Four such procedures are described below, each as illustrative classroom practices and with a research base from the literature--peer tutoring, mastery learning, data-based evaluation, and creative/innovative activities.

Peer Tutoring

Every child in this classroom was both a tutor and a tutee at some time during the semester. Allowing each child to fill both roles may have enhanced the effectiveness of the system. Eddie, for example, tutored Charles in math. Even Charles was a tutor when he showed others how to push people in the swings.

Illustrative Classroom Practices. The rules for tutors were quite explicit. Tutors show/tell their students what to do, then watch as the students perform; they repeat the demonstration or instructions if the student makes an error, and they praise when the student's response is correct. It was interesting to watch Susan teaching reading, Scott teaching science, Mary Ann demonstrating arts and crafts. All of them had great patience, used a positive approach, and took their assignments very seriously.

Teacher monitoring of the tutors was an integral part of the system. It was not time-consuming, but it was extremely important. Each tutor had demonstrated prior mastery of the skill which s/he taught, and I asked each to use methods/materials with which the tutor and I had worked previously.

Learning tasks to be presented by tutors were also structured. In every case the tutor was told exactly what the tutee should learn and was provided with all the necessary materials. Sometimes these materials included task cards on which step-by-step instructions were written, plus concrete materials for completion of the task. At other times the materials were simply worksheets or book pages, and the task for the tutee was to complete the page. Occasionally one tutor worked with everyone in the class, each for a short period of time on the same task. This happened, for example, the day that Scott showed everyone in the class how to use the metric scale to weigh classroom objects. We used an hourglass timer to prevent any one child from monopolizing the tutor's time and to allow everyone to have a chance.

Research Base. Dale (1979, p. E-36) suggests that peer tutoring can help mainstreamed disabled children to "accomplish specific goals" and in the process it can help the tutor to "become more accepting of differences and likenesses in individuals." According to Dale, some of the factors which are important in the program's success are "careful selection of participants, administration of pre-post tests for tutors, choosing the right place and the right time for tutoring sessions, and making sure that tutors are given good lesson plans" (p. E-27).

A number of studies provide evidence that peer tutoring is effective with mildly handicapped students. Ehly and Larsen (1980) have summarized much of this research, indicating that cross-age tutoring studies are reported much more frequently than studies of classmate tutoring. Some of the studies reviewed by these authors suggest that the tutee, being more relaxed when working with a peer than with a teacher, is better able to concentrate on learning. The Ehly and Larsen summary indicates that the tutee's achievement gains may transfer to the regular classroom, and that tutoring seems to facilitate improvement in self-concept. Ehly and Larsen also suggest the need for some type of structuring in content and/or presentation, and provide a chapter on peer tutoring for handicapped students (p. 204-215). This chapter includes several research summaries indicating that peer tutoring was effective in increasing the tutee's achievement levels in math skills, gross and fine motor skills, social behavior, and articulation skills. In many of these studies the tutors are also reported to have benefitted from the program. Jenkins et al. (1974) concluded that peer tutoring in word recognition, word spelling, oral reading, and multiplication helped mildly retarded and learning disabled students to learn more effectively than did small-group instruction by the teacher. Sapon-Shevin (1978) and Champagne and Goldman (1975) reported similar findings. Dale (1979) reported improvement in word attack skills and sight vocabulary as a result of peer tutoring.

Several management strategies have been suggested for instructional arrangements in which school children teach other children. Neff and Pilch (1976) and Zeitz (1978) recommended that older students serve as tutors for younger ones. These authors also described two distinct grouping patterns--matched pairs, which features partners with similar skills who work together, and heterogeneous groups, in which several students work cooperatively. Ehly and Larsen (1980) described the procedures for establishing a peer tutoring program, including the selection and training of tutors and the pairing of tutors with tutees. They also discussed other important considerations, such as the structuring of time and space, and the evaluation of the program's effectiveness.

Mastery Learning

The practices discussed in the section which follows can be described only loosely as "mastery learning" strategies. The distinction is made here between "mastery learning" and "non-mastery learning" strategies simply on the basis of what happened to the students at the end of a particular "unit" of instruction. In the "non-mastery learning" units they were tested, graded, and then introduced to the next unit regardless of their performance. In the "mastery learning" units they were tested, graded, and then given either additional instruction/practice (if they had not met criterion level), or allowed to work on supplementary/enrichment activities (if they had demonstrated mastery on the test). Although some variation of this approach was used in many subject areas during the semester, it is described below for reading skills only.

Illustrative Classroom Practices. Data collected from reading test scores three times in the semester indicate some interesting things about the use of a "mastery learning" approach with children in the three different reading groups.

In January the class was divided into three groups for basal reading instruction, with instructional levels of grade one level 2, grade three level 1, and grade three level 2 (i.e., 1-2. 3-1. and 3-2). These groups had been established in September, after the former teacher had administered Individual Reading Inventories (IRI's). Twenty of my 24 children were instructed in one of these groups. Two children (Charles and Eddie) received all their reading instruction in the special education resource room, and two of my other children went to another third grade classroom for a 2-2 reading group. Simultaneously, three children from other home rooms (two in 1-2 and one in 3-2) came to my class to join our groups for reading instruction. There were 23 children in all in the three groups.

The reading series was published by Houghton-Mifflin (1979). It was used according to the directions in the teacher's manual, except as the descriptions below indicate that it was modified. This series itself features an approach that might be described as "modified mastery learning." For each book in the series there is a scope and sequence of skills. The "flow chart" for instruction suggests : (1) give pre-assessment test, (2) provide instruction, (3) provide practice, (4) give post-assessment test, (5) reteach lesson for those not meeting criterion, and (6) give reassessment test to children who were re-taught. The daily plan in the teacher's manual contains directions for basic instruction and practice (steps two and three), while the pre- and posttests, extra practice activities, and reteaching suggestions are included in other sources such as spirit masters and activities packets. The pre- and posttest sequence is recommended for each separate skill. There is also a general posttest at the end of each "magazine," or collection of stories covering a particular theme.

Most of the books have three magazines and are intended to provide instruction for approximately a half year. Each of the three groups finished the last magazine in their book and took a general posttest in mid-to-late January. The low and middle groups took the first magazine test in their new books in March and the second in May. In March, high group took the first magazine test only in their new books. Since their skill sequence was more complex, they did not complete their second magazine by the end of the year.

All the magazine posttests are pencil-and-paper tests covering the three basic areas of decoding, comprehension, and reference/study skills. There is a "maximum possible" score and a "minimum acceptable" score (80%) for each subskill. According to the manual, a student who does not pass the subtest with the minimum acceptable score should be re-taught the skill, then re-tested for mastery.

1. High Group: procedures and results. During the instructional time period which preceded the first magazine test (This was actually the last magazine in book 3-2.), only the activities section in the teacher's manual was used as a daily guide to lesson planning and teaching. The pre- and posttests over specific skills were not used, nor were the supplementary activities, although the activities suggested in the teacher's manual, including the periodic specific skill lessons, were taught carefully. Also, the workbook pages were not necessarily assigned in accordance with other instruction presented. They were, instead, assigned arbitrarily each day, as was the practice in this school. Each workbook page assigned was checked the next day during the reading group.

End-of-magazine total posttest scores for the seven students in the group were as follows:

Scores for First Test (Test #3, Book 3-2) January, 1980

Student	Score
1	96%
2	93%
3	91%
4	89%
5	87%
6	89%
7	87%

During the instructional time period which preceded the second magazine test (This was actually the first magazine in book 4-1.), the skills instruction was presented according to a mastery learning model, with only one basic skill being introduced in each lesson. This was a skill previously identified as one in which the majority of students needed instruction. All the instruction and follow-up activities, including workbook pages, were geared to that skill, and a posttest was administered after the instruction was given. The few who failed the posttest were given more instruction and/or activities, then retested. During this time period, many activities in the teacher's manual and workbook were omitted if they were not related to the skill being taught. Supplementary activities were located for those skills on which the series did not provide enough practice, in my opinion, to ensure skill mastery.

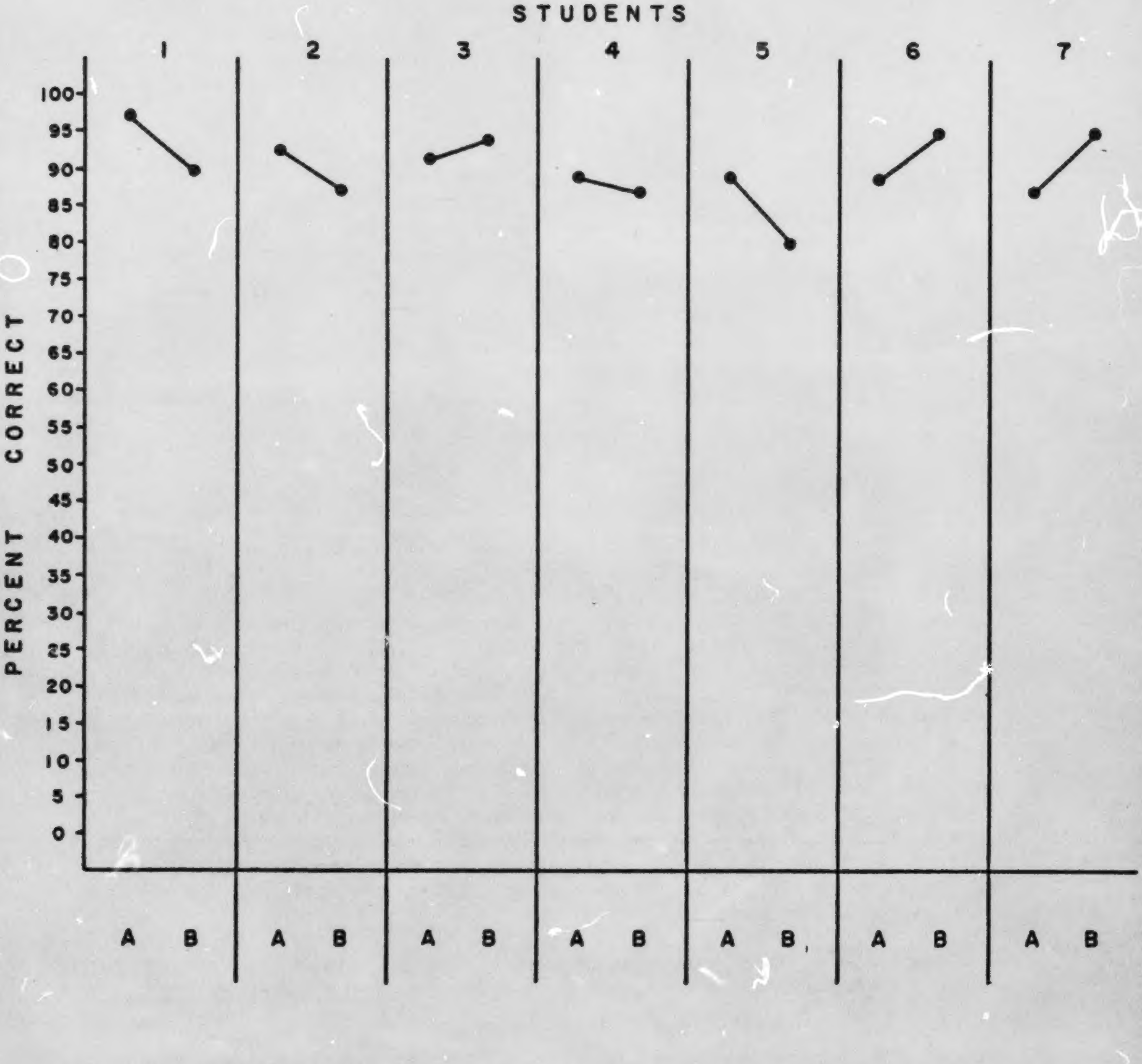
End-of-magazine total posttest scores for the seven students in the group were as follows:

Scores for Second Test (Test #1, Book 4-1) March, 1980

Student	Score
1	90%
2	87%
3	92%
4	88%
5	80%
6	95%
7	95%

Posttest comparisons for each student in the two methods are shown in Figure 1 on the following page.

Figure 1



A = MANUAL B = MASTERY

The "mastery learning" approach did not seem to be either more or less effective than the "read-the-manual-to-the-children" approach for the high group. The group was small, however, and only two data samples were taken, so no inferences can be drawn from these data in isolation.

2. Middle Group: procedures and results. During the instructional time period which preceded the first magazine test (This was the last magazine in book 3-1.), only the activities section in the teacher's manual was used as a daily guide to lesson planning and teaching. The pre- and posttests over specific skills were not used, nor were the supplementary activities, although, as with the previous group, the activities suggested in the teacher's manual were taught carefully.

End-of-magazine total posttest scores for the 11 students in the group, none of whom met criterion level, were as follows:

Scores for First Test (Test #3, Book 3-1) January, 1980

Student	Score
1	67%
2	36%
3	64%
4	60%
5	67%
6	78%
7	44%
8	71%
9	67%
10	75%
11	69%

During the instructional time period which preceded the second magazine test, the first magazine in book 3-2, the skills instruction was presented according to a mastery learning model, with only one basic skill being introduced in each lesson. This was a skill previously identified as one in which the students needed instruction. All the instruction and follow-up activities, including workbook pages, were geared to that skill, and a posttest was administered after the instruction was given. Those who failed to meet criterion on the posttest were given more instruction and/or activities, then retested. During this time period many activities in the teacher's manual and workbook were omitted if they were not related to the skill being taught. Again, supplementary activities were located for those skills on which the series did not, in my opinion, provide enough practice to ensure skill mastery.

End-of-magazine total posttest scores for the 11 students in the group, eight of whom met criterion level, were as shown on the following page.

Scores for Second Test (Test #1, Book 3-2) March, 1980

Student	Score
1	88%
2	84%
3	82%
4	66%
5	74%
6	88%
7	70%
8	92%
9	90%
10	94%
11	88%

During the instructional time period which preceded the third magazine test, the second magazine in book 3-2, the same procedures were followed as had been used preceding the first of the three magazine posttests.

End-of-magazine posttest scores for the 11 students in the group, four of whom met criterion level, were as follows:

Scores for Third Test (Test #2, Book 3-2) May, 1980

Student	Score
1	84%
2	76%
3	76%
4	76%
5	71%
6	65%
7	75%
8	85%
9	84%
10	89%
11	75%

This was a very crude ABA design. If the individual student's responses to the two methods are plotted, they show an interesting pattern as indicated in Figure 2.

Figure 2

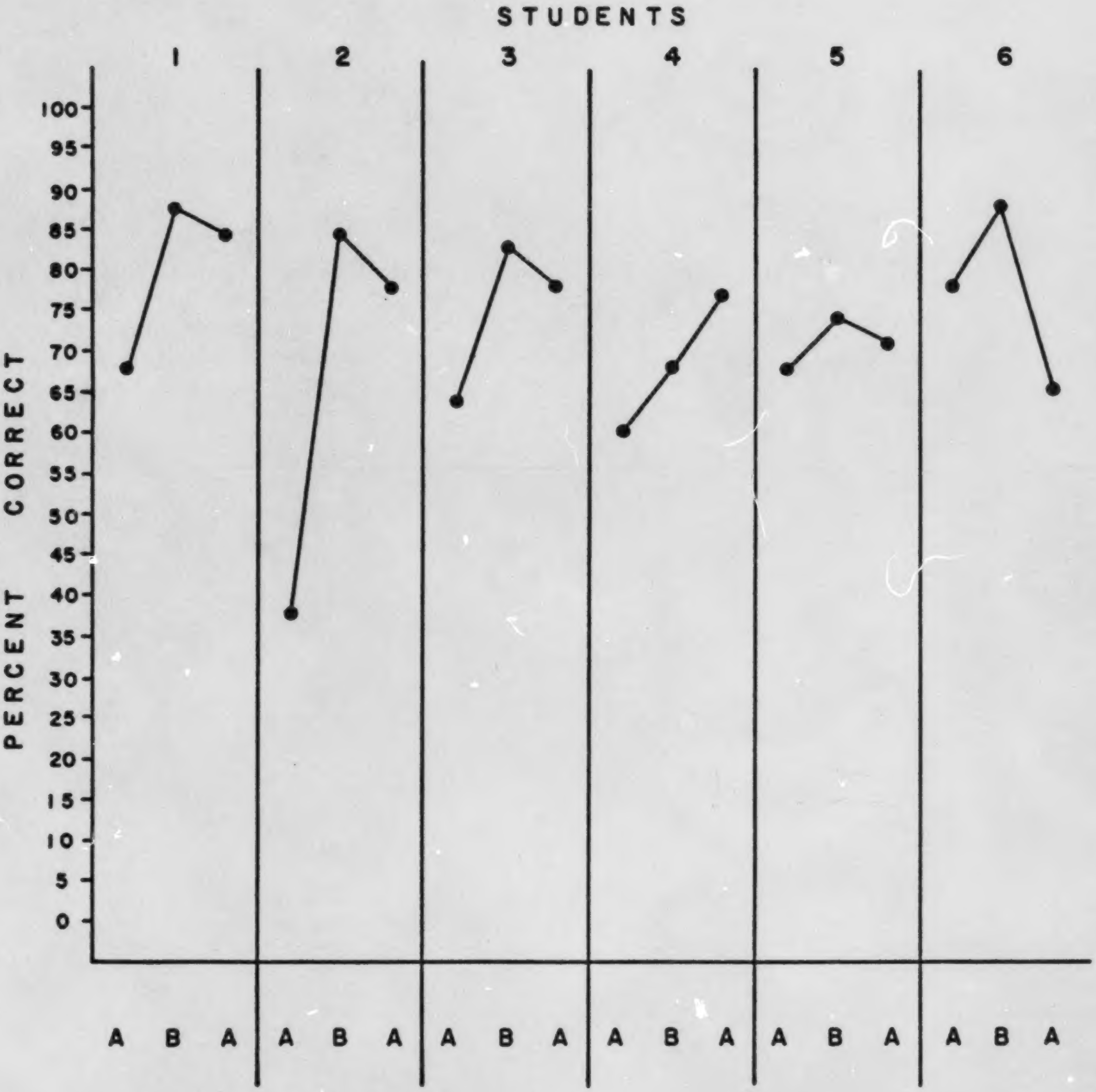
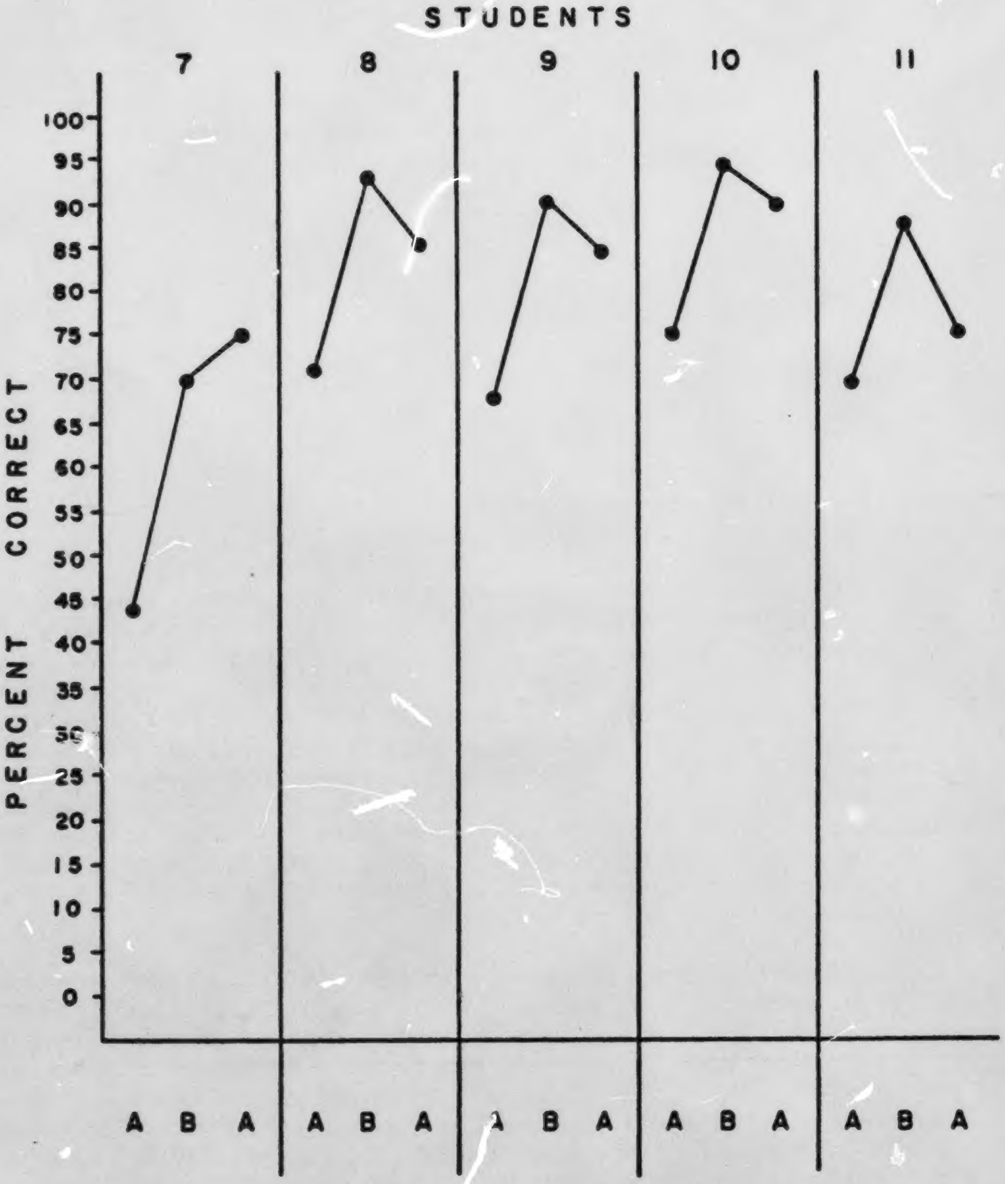

STUDENTS
1
2
3
4
5
6
PERCENT CORRECT
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A B A
A B A
A B A
A B A
A B A
A B A

Figure 2 (continued)



The pattern of better responses to the "B" (modified mastery learning) method suggests that something about method B is in need of further study. Conclusions would be premature, but the comparison of this group's reactions to the different approaches raises some interesting questions.

3. Low Group: procedures and results. A "mastery learning" approach similar to that described as method B for each of the above groups was used throughout the semester for the low group. During the instructional period preceding the first posttest, the method was exactly as described previously as method B. It was, however, an even more structured approach, due to the nature of the basal program, since most of the skills taught at this level focus on single concepts.

End-of-magazine tests for the 5 students in the group, only one of whom did not meet criterion, were as follows:

Scores for First Test (Test #3, Book 1-2) January, 1980

Student	Score
1	91%
2	92%
3	85%
4	87%
5	74%

During the instructional period preceding the second magazine test (the first test in book 2-1, given in March) the procedures were altered drastically. Since all the children were experiencing difficulties with decoding words in print, this area of the program was selected for emphasis during the next eight to ten weeks. Also, because of behavioral problems, group instruction was discontinued except for a ten minute period each day when skill-based instruction, using the decoding flashcards from the DELTA materials (Morsink, 1977), were presented. A follow-up posttest from the basal series was administered whenever the DELTA cards featured one of the skills that was included in the basal teacher's manual, but no other instruction from the manual, the workbook, or the related activities were used.

Two other activities were used with this group during the second instructional period. First, each child was given a blank cassette tape on which to record five minutes of oral reading from one of the stories in the first magazine of book 2-1. There was not time for every child to read every day, but each child read orally on tape two or three times per week. They were asked to choose the part of the story they wanted to read aloud and to read the whole story silently first. It was strictly an honor system, and it would be absurd to claim that all pupils actually read silently, or that they read stories sequentially in the first magazine. All that can be claimed is that they read orally from this magazine in the book two to three times a week, five minutes each time, for a total of 10 to 15 minutes per week.

Finally, each child worked independently for about fifteen minutes per day in an individualized learning packet. Each packet contained a self-checking workbook at the child's instructional level. In three cases this was a Programmed Reader, books D, #1, 2, 3, 4, or 5 (Sullivan, 1969); for the other two children it was a level A or B book from the Barnell-Loft (1976) series on "multiple meanings" or "drawing conclusions," with a teacher-made answer key. Each packet also contained a series of teacher-made worksheets for practice on short vowel patterned words. Most of these were simply busywork, involving copying or visual matching activities. Details on these materials can be found in a related document (Morsink, 1981).

The whole point here is that activities used during the second posttest period were not those suggested by the basal series. They were highly structured and completely individualized, except for the daily group response to the DELTA cards. They featured mastery learning in the sense that students were mastering specific decoding skills. But these skills were the same ones presented in the teacher's manual and measured by the magazine posttest in only about half the lessons.

The posttest scores for the five children in the group were as follows:

Scores for the Second Test (Test #2, Book 2-1) March, 1980

Student	Score
1	92%
2	94%
3	86%
4	95%
5	85%

The scores of all students were slightly higher than those on the first posttest, even though most of the content on this test was not taught to them directly. None of the activities in the teacher's manual was followed, except that the decoding-emphasis posttests were given. Even the stories in this magazine of the book were read only on a casual basis. Even if the number of students were greater and the findings replicated, it would be incorrect to infer that the materials in the series are of questionable value. Two observations which recurred in the daily logs, however, suggest topics for further study: (1) Had the highly structured decoding program helped students to develop skills which they were able to apply to the reading of other words in context? (2) Did each student spend more time on task in this period, simply because activities were individualized behavioral expectations were strict, and teacher help was immediately available? An entry from my log indicates the strict on-task expectations for the group during this time period:

> Today with Sunburst I used the stopwatch as a timer for on-task behavior. I'm expecting them to work for at least 15 minutes each day

> on their individual folders. We have approximately 20 allocated to that activity, so what I'm asking for is 15 out of 20, or 75% of the time. They were told that when they are working, I turn on the stopwatch. When even one child is off-task, I push the stop button and show the offending child the watch. As soon as this child is back on task, I start the watch again. The group must accumulate 15 minutes total time when nobody is off-task before they can go to recess.

During the instructional period preceding the third magazine test, the procedures were changed again. Three activities were scheduled, and three kinds of data on each child were collected daily. First, there was some kind of "test," which followed a single-skill instructional period. The test was either a standard pre-post test from the series or an oral test, given when children read from the reading chart that accompanied the basal series. The first day, for example, it was an oral vocabulary test, really a review of words already learned. Second, each child read orally for one minute in a group setting. I timed the child with the stopwatch, and at the end of that minute I asked the reader to count the number of words s/he had read. As the child read, I wrote down any words s/he missed and subtracted these from the total number that they read in order to record a "words read correctly per minute" sample for each child, every day. Third, all children in the group completed a page in the workbook, selected because it featured practice on the specific skill on which they were working.

Scores for the five students on the third posttest were as follows:

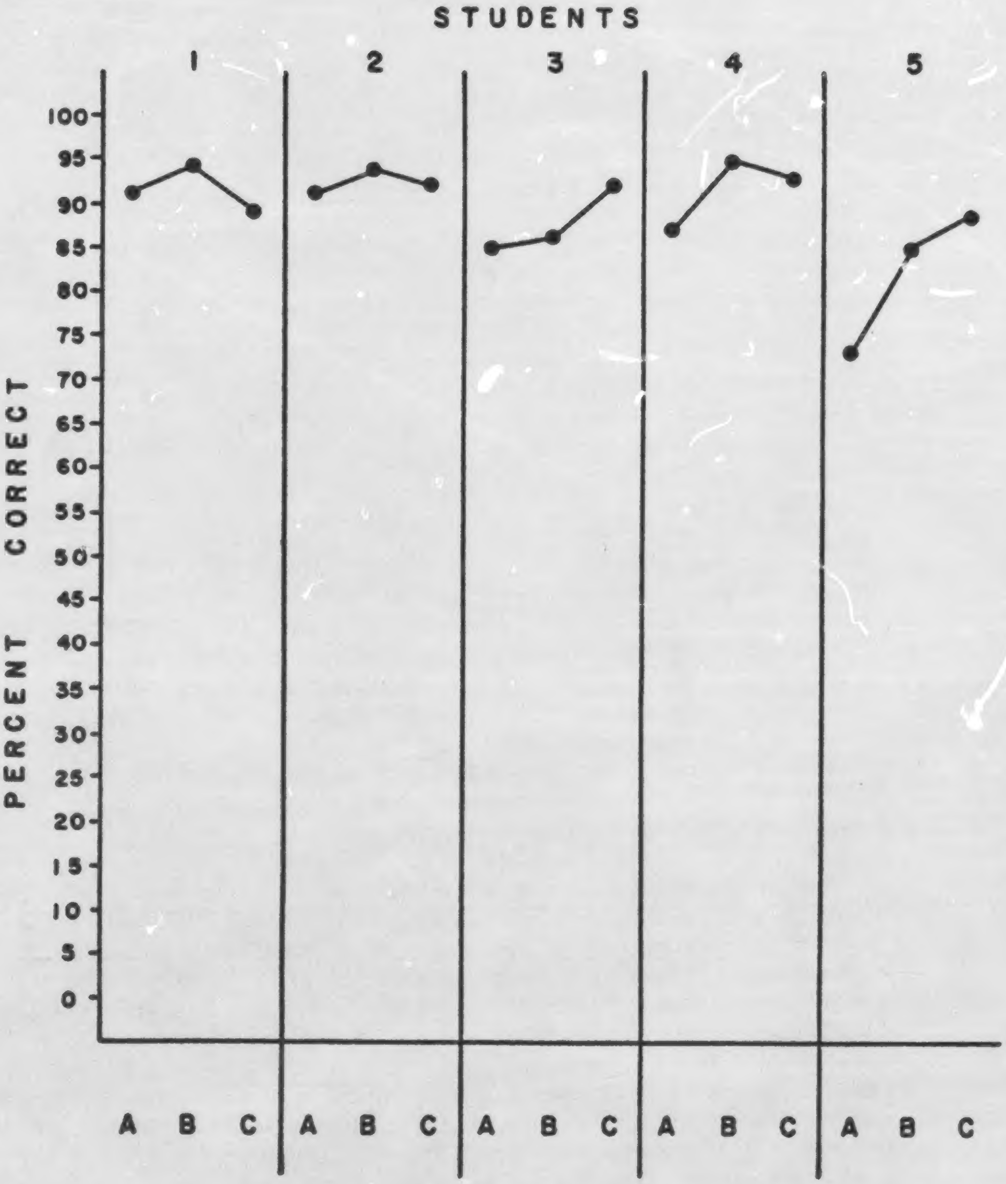
Scores for the Third Test (Test #2, Book 2-1)

Student	Score
1	89%
2	93%
3	92%
4	93%
5	88%

The data for each procedure are graphed in Figure 3.

The importance of "mastery learning" for the low group was never really investigated since the idea of teaching specific skills and testing for mastery was emphasized throughout the three test periods. Some interesting questions--such as those related to the generalizability of decoding skills instruction, and the need for increased on-task time--might be raised, but no inferences can be drawn from these data because of the small sample and the need for replication in controlled settings. For this class, the mastery learning model was more nearly implemented for the middle group than for either of the other two.

Figure 3


STUDENTS
1
2
3
4
5
PERCENT CORRECT
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
A B C A B C A B C A B C A B C

Research Base - Mastery Learning. Guskey (1981) has summarized the research base on mastery learning and its implications for the mainstream classroom. He points out that the theoretical considerations underlying mastery learning were developed through the work of Benjamin S. Bloom of the University of Chicago. Bloom, who noted that most teachers administer tests to measure students' learning progress, was concerned that few students in a class ever really master the material or objectives taught. His teaching-learning strategies included a feedback and corrective process labeled "Learning for Mastery" (Bloom, 1968) or "Mastery Learning."

Guskey further explains that in mastery learning "a quiz or test is administered to check on learning progress. With the results from this 'formative' test (Bloom et al., 1971), each student has a very specific prescription of what more needs to be done to master the material or particular learning objectives from that unit" (p. 37).

Summarizing the work of Block and Anderson (1975), Guskey indicates the process of teaching for mastery is usually divided into five steps: valuing, planning, managing, evaluating, and revising.

Guskey (1981) suggests that the "teacher should find that close to 80 percent of students in the class attain the mastery levels of achievement that was previously attained by only about 20 percent" (p. 41). As it relates to the mainstreamed child, Guskey summarizes the research on the effectiveness of mastery learning:

> Although mastery learning strategies have been successfully applied in a very wide variety of contexts and educational settings over the last decade (see Block and Burns, 1976; Guskey and Monsaas, 1979; Ryan and Schmidt, 1979), the special benefits of these instructional techniques for exceptional children and teachers in mainstream classrooms have only recently been called to attention (Guskey, 1981, p. 42).

According to Guskey, mastery learning can facilitate cooperation rather than competition in classrooms, and can encourage children to be more supportive of one another:

> There is also strong research evidence that children become more involved in instructional activities and enjoy them much more under cooperative rather than competitive conditions (Hammond and Goldman, 1961; Haines and McKeachie, 1967; Devries and Edwards, 1973; Wheeler and Ryan, 1973; Johnson and Johnson, 1975) [Guskey, 1981, p. 42].

Guskey cautions that teachers who implement mastery learning will have to learn to be instructional leaders and facilitators rather than "managers of competition," and he suggests that there is presently little preservice training which prepares teachers for this new role.

Data-based Evaluation

All teachers collect data, but much of this data collection is time-consuming and some of it has little value. Grading papers and recording grades were data collection procedures which initially took a great deal of my time but yielded little information that could be used in program evaluation or future planning. In this school, most teachers checked all student papers daily and graded them with letters--E (excellent) G, S, N, U (unsatisfactory). This was quite subjective and the grading process took at least two hours per day. Yet an "N" in handwriting indicated only that the writing needed improvement, and a "U" in math meant simply that the student's work was unsatisfactory. Neither communicated the kind of help that was required.

Illustrative Classroom Practices. One of the objectives of the semester-long study was to establish a data-based system that yielded information for program planning without becoming prohibitively time-consuming. The system that was established differed by subject area and student, and it was not "continuous" for every child in each academic area. Some illustrations follow:

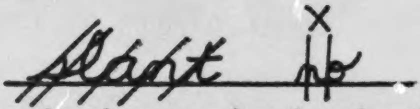
Handwriting, for the purpose of instruction in this class, had been divided into five subtasks: letter formation, size, alignment, space, and slant. Each was evaluated separately for every child so that by the end of the fifth week there was an IEP on handwriting for every child in the class. First letter formation was evaluated. Each day for six days the handwriting assignment was to write a whole line each of four of the upper and lower case letters in the alphabet (day 1, for example, involved writing a, b, c, d). For each child these letter formation data were collected on a pass/fail basis. The letters which the child had failed to form correctly--that is, legibly so that each was distinguishable from all others--were recorded on a chart:

Student 1	j
Student 2	x
Student 3	H, m, X
Student 4	k
Student 5	b, d, J, Q
Student 6	B, P, p, q
Student 7	I
Student 8	B, H, K
Student 9	H, I, k, m, X
Student 10	T, W, L
Student 11	B, T, p, X
Student 12	B, H, J, K, L, M, m, N, n, P
Student 13	B, H, k
Student 14	H, G, I
Student 15	T, i, J
Student 16	K, w, Z

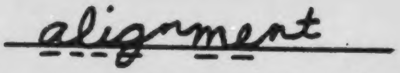
etc.

Next, each child's performance of the subtasks--slant, size, alignment, and space--was evaluated separately. This was done by grading the papers of four to six children each day, while others were subjectively evaluated as "E," "S," "U," etc. During week #1, these papers were graded for slant; during week #2, they were evaluated on alignment, and so forth. Grading criteria follow:

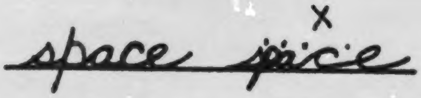
Slant: A ruler was placed at approximately a 60° angle through the middle of the first ten letters on the page. Lines drawn through the letters showed whether or not a correct slant was exhibited.



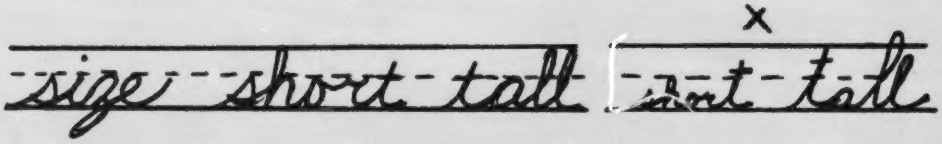
Alignment: A ruler was placed under the first ten letters on the page, aligned with the base line on the ruled paper. Lines drawn under the letters indicate correct alignment:



Space: A pencil point was placed between each of the first ten letters on the page and/or a pencil eraser was placed between each word:



Size: A ruler was placed at mid-line for short letters and at the top of the line for tall letters, using the first ten letters on the page as a sample:



Records kept showed the standing of each child on each of the four areas rated:

Child	Slant	Alignment	Space	Size
1	80	70	60	70
2	90	80	70	60
3	70	60	60	70
4	80	90	90	60
5	90	90	70	60
6	80	80	70	90
7	70	80	70	60
8	90	80	80	90

Once data had been collected to indicate the nature of each child's handwriting problems, instruction was focused on the problem areas. Most of the letter formation instruction was the "watch me make this letter, now you show me how to do it" kind. Instruction for subskills featured a specific explanation of the criteria for accuracy--"Try to get the bottom of all your letters right on the line, like this." Also, each child kept a copy of the "Right Rat/Wrong Rat" models taped on his/her desk.

Throughout the semester, additional writing data were kept. Five or six children's handwriting papers were chosen each day for data collection, and samples were obtained on everyone once a week. Each time a paper was graded, all four subskills were evaluated, and from the total score of 40 (10 points each for the four skills) the child's correct score was recorded as a fraction (for example, 32/40 = 8 errors). In addition, any subskill on which the child fell below criterion level (8 of 10 correct) was recorded, and any letter on which the child did not form correctly was recorded and circled. An example of the data collection procedure is illustrated in Figure 4.

Figure 4

	Weeks			
Child	1	2	3	4
1	$\frac{22}{40}$ ⓙ size, line	$\frac{29}{40}$ size	$\frac{27}{40}$ size	$\frac{28}{40}$ size
2	$\frac{33}{40}$	$\frac{35}{40}$	$\frac{31}{40}$	$\frac{36}{40}$
3	$\frac{29}{40}$ ⓜ size, slant	$\frac{32}{40}$ slant	$\frac{33}{40}$ ⓜ slant	$\frac{35}{40}$
4	$\frac{22}{40}$ slant	$\frac{35}{40}$	$\frac{34}{40}$	$\frac{36}{40}$
5	$\frac{31}{40}$ line	$\frac{35}{40}$	$\frac{34}{40}$	$\frac{36}{40}$
6	$\frac{21}{40}$ Ⓑ slant, size space, line	$\frac{25}{40}$ Ⓑ size, space line	$\frac{30}{40}$ Ⓑ space	40 space

These data tell the teacher that child #1 still needs help on size, child #3 on slant and "m", and child #6 on space and "B." It also shows which children have improved in which subskills. A whole grade book full of E, G, S, N, and U could not provide that kind of information, yet the above data collection procedure for five or six children each day did not take any longer than daily subjective grading for all 24 students had taken previously.

Math. Initially, my data collection procedure was to "grade" papers daily, awarding letter grades rather subjectively as E, G, S, N, or U. Grades were recorded first on a "grade average" slip that children had taped to their desks and took home for parent signature at the end of the week, then they were recorded in the grade book. The procedure was extremely time consuming and of little value in instructional planning.

The district also had a diagnostic math test for each grade level, based on the objectives which were to be mastered at that level. The test was computerized and yielded a printout indicating which of the grade level skills each child had mastered.

Math instruction was focused on the skills in the third level continuous progress profile. Except for the three students who went regularly to the resource room, the whole class was grouped together for initial math instruction. Many of the skills taught were those included in the math book, but instruction was expanded with outside activities when necessary. For example, in metrics a metric kit of metric measuring devices and concrete objects was used; in remedial work for selected children who had not mastered some second grade skills in telling time, the Kentucky TIME program and various games were used. After I introduced each skill, I circulated around the class to observe and assist the children as they began their practice work.

The procedure for grading math papers led logically to a modified system of data collection with a mastery learning dimension. For students whose math papers indicated their performance was not satisfactory, I noted on the paper, "You need some help on this." The next day(s), those whose performances were satisfactory were given additional practice, while selected students with excellent performances were chosen as the tutors for children who had been absent. The group needing more help worked initially with me, using concrete objects and/or special remedial procedures. The only datum kept on the remedial group was a list of their names and a tally of the number of days they received special help on a given skill as shown in Figure 5.

Figure 5

Measuring centimeters - length

Jerry I I I
Jane I
Tami I I
Susan 𝍸
Bill 𝍸
Eddie 𝍸

Measuring volume - liters

Sarah I I I
Susan I I
Tami I I
Bert I I

Measuring weight - kilograms

Marty I I
Sarah I I
Jane I I I
Jerry I I I
Susan I I I

Estimating distance - cm, m, km

Sarah I I I I
Marty I I I
Rhonda I I
Susan I I I I
Karen I I
David I I
Jerry I I I I

Figure 5 (continued)

Thinking skills	
Jerry	𝍸 I I
Jane	I I I I
Tami	I I I
Susan	𝍸 I I
Sarah	I I
Bert	I I I I
Marty	𝍸 I I
Karen	I I
David	I I I I

Regrouping - subtraction	
David	I I I I
Bert	𝍸 I I I
Susan	𝍸 I I I
Tami	I I I
Jane	I I I
Marty	I I I I
Jerry	𝍸 I I I

When the small-group performance of the three children having greatest difficulty was adequate, a test worksheet or book page was given to the whole class and grades were recorded. For children who still needed instruction after this test, individual help was scheduled by student tutors. These data were recorded as a percentage score:

Student	Percentage	
1	100	
2	92	
3	67	tutoring
4	79	tutoring
5	88	
6	96	
etc.	88	

Analysis of test papers sometimes indicated that the child had made a minor error and did not need extensive re-teaching. This was the case with Alan, whose work indicated that he could borrow in subtraction, but made a consistent procedural error as follows:

$$\begin{array}{r} 62 \\ -37 \\ \hline 35 \end{array} \qquad \begin{array}{r} 41 \\ -19 \\ \hline 38 \end{array}$$

In this event, Alan was shown that he had forgotten to borrow in the tens column and had, instead, subtracted the top number from the bottom number. He was given a chance to re-take the test and scored 92%.

As indicated earlier, the children had been taking home a grade average slip, a mini report card, each week. The math portion of this grade average report looked like this:

	Monday	Tuesday	Wednesday	Thursday	Friday	Grade Average
MATH	carrying- 3 columns 13/30	carrying- 3 columns 20/30	carrying- 3 columns 30/30	metric measurement 10/10	metric measurement 15/15	S+

Daily reporting sometimes resulted in over-emphasis on the errors a child made while learning a new skill. It was very time-consuming, yet contributed little to the data base on the child's progress and skill deficits. On Monday and Tuesday in the example above, George was just learning to carry in three-column addition, and he was having difficulty. By Wednesday he had reached criterion level on this skill. On Thursday and Friday, however, the assignment was a review of metric measurement, which he had mastered previously. Thus the "average" was nothing more than a general indicator that his math work was satisfactory.

I phased out the practice of sending parents a weekly grade point average, and sent them a bi-weekly data-based report instead. The bi-weekly report indicated the specific skills taught, the number of days instruction on skills, the mastery posttest score, and--because these children and parents wanted "grades"--a letter equivalent for the test score:

Name George Parent's Signature

	MON	TUES	WED	THURS	FRI	GRADE AVERAGE
Math	92	100	95	98	100	E
Writing	38/40	5	G	6	E	G+
Spelling	4/4	8/8	12/12	15/15	100	E
Language	capitals	97	E	homonyms	E	E

A carbon of this record was kept at school. It served as my grade book and eliminated the need for time-consuming copying of grades. These data were also much more useful for instructional planning.

Final mastery data for each child were recorded on the child's permanent record at the end of the year from computer printouts indicating which grade level math skills he/she had mastered.

Reading data. The most extensive data were kept in the area of reading. The following describes how this was done in a manner that was not prohibitively time-consuming. For the low group, daily performance information was collected, using several different systems adapted to the task. For the entire class, records on skill mastery, oral reading, and comprehension were kept on a weekly basis.

On the following page (Figure 6) is an example of the chart that was kept on a clipboard and used for recording during the reading groups.

Data on oral reading were collected for individuals while the others engaged in silent reading. I circulated around the group and asked children, in turn, to "read out loud where you are reading silently." This was a private, rather than public, observation of oral reading conducted within the group setting. If reading was fluent and rapid enough for conversational speech, and there were fewer than one or two errors, or errors were self-corrected, a score of "100" was recorded, indicating no problems. Words misread were recorded if the child had a history of word attack difficulty (as student #6, below). Rate was measured with a stopwatch if it appeared to be a problem (as with student #5, below). Other notes were made on possible problem areas and on excellent performance deserving recognition. Each child's oral reading was sampled this way at least once a week, and these patterns of difficulty served as guides for my remedial planning.

Figure 6

Reading Data

Date: March 3-7
Group: Passports

Student	Oral Reading Observations	Comprehension	SKILLS			
			ad-*	dictionary	main idea	-able**
1	100, figured out "stupendous"	𝍸	100	87	80	100
2	holding book closer	I I 0 I I	absent	70	60	100
3	frequent repititions	I 0 0 I 0	60	70	70	100
4	100, good expression	I I I 0 I	100	93	100	100
5	slow: 57 WPM	0 I I I 0	80	66	80	90
6	missed: beneath, medicine, bruised, infected, patient	0 0 I 0 I	60	100	90	80

*prefix **suffix

etc.

Comprehension was measured publicy in a group setting while the group discussed the story in response to questions from the teacher's guide. Each time a child was asked a question, I recorded a tally mark for a correct and an "0" for an incorrect response. I recorded the first five responses made by each child every week. These data could be readily translated into a % score for comprehension just by visual inspection (e.g., I I 0 I I = 80%). Again, patterns of difficulty provided data for remedial planning.

To measure skills progress, I recorded percent correct on a test over a skill that had been presented to the group. The test was either a workbook page, basal series posttest, or teacher-made worksheet. We checked these tests together in the group, and each child wrote his/her score as a fraction at the top of the page. One child was chosen each day to convert these fraction scores to percents, using the calculator, and to record them on my chart. The child selected to do this was the one who had been most attentive in the group.

These daily data scores on reading skills need to be interpreted with caution, however, as they indicate only the child's performance on a specific skill as measured by a sepcific test and do not necessarily mean that the child has or has not mastered the generic skill. The score for "main idea," for example, means that the child could or could not complete the written exercise in which the task was to choose one from among three sentences that gave the main idea of the paragraph. The end-of-magazine tests in the basal series (described above under "mastery learning") provided the major data base for forming re-teaching groups, although the weekly data comprised a valuable supplement which was not time-consuming to collect.

For the low reading group, data were taken each day. Data were collected during the instructional period when each child was working independently in an individualized folder. During this time the children wrote down the number of each workbook page they finished and each worksheet they completed. I recorded the skill and scores from the basal reassessment tests on decoding skills, the pages read orally on tape, and the in-book test scores from the workbooks. During the last six weeks, data were kept on (1) scores for the basal workbook pages, (2) the number and accuracy of words read per minute, and (3) the name and percent correct on skills from basal reassessment tests.

The procedure for collecting data on reading rate may be of particular interest since it indicates how this can be done in a group setting. When I said "go," the child began to read aloud. I said "stop" when my stopwatch indicated 60 seconds had passed. Then the child counted the total number of words read and whispered this number to me to record while the next child was reading. (When there was cause to doubt the child's accuracy in reporting, I counted the words myself.) Jerry's oral reading data indicated, for example, that in early May his oral reading rate was increasing (46, 68, 55, 89, 72 wpm), while his accuracy remained at 96% or above. This represented real progress for Jerry, suggesting that he was finally able to profit from continued group instruction in the 2-1 basal.

Other Data. Two other kinds of data were collected and will simply be mentioned here. The language skills for the grade level were measured by tests in the back of the book. Children who passed the test were allowed to do "special language" activities, as described under creative activities, while those who failed were given remedial instruction. Data on skill needs and dates of mastery were kept, as shown in Figure 7.

Figure 7

Student	Capital (first word in sentence)	Mastery (80%) Date
1	60%	2/8
2	72%	2/8
3	25%	2/11
4	60%	2/14

A very special study was also conducted over a two-week period to determine whether a "visual" or "auditory" method of spelling instruction was more effective for each child. Data on tests were kept daily for each child. This kind of intensive data-keeping is time-consuming and is recommended only for such special purposes.

Research Base for Data Collection. Gast and Gast (1981) have summarized the research base on academic data collection in mainstreamed classrooms. They indicate that many teachers do not think they have time to collect data. They propose that this attitude reveals "an inherent misunderstanding or misconception that teaching and data collection are incompatible behaviors " (p. 10). In fact, they suggest that the opposite may be true. "It must be realized that frequent and systematic program evaluation can save time in the long run, eliminating the continuation of ineffective instructional strategies" (p.10).

Citing the work of Bijou (1977) and Scott and Goetz (1980), Gast and Gast insist that the only purpose of data collection is to decide whether to maintain or to modify a program, and they caution teachers against recording all behavior simply for the sake of collecting data. They summarize by saying that "practicality is a key factor when collecting data, both in terms of what data are to be collected, and how often data are to be collected" (p. 10).

Gast and Gast acknowledge that the initial phases of data collection can be time-consuming, but they cite the Scott and Goetz summary of its benefits. It can help the teacher to identify students' strengths and weaknesses, improve his/her observational skills and awareness or behavior, as well as enabling the teacher to communicate with other professionals and to analyze program effectiveness.

In terms of its effects on the teaching process, Gast and Gast conclude:

> Few studies in the literature have evaluated the effects of teachers, as data collectors, on student behavior and the teaching process. Preliminary findings of one such study by Scott and Goetz (1980) suggest tht student-teacher interactions may be affected, but to an insignificant degree, and certainly not to the extent that their

> teachers had predicted. Their position is made clear; the advantages of data collection to both student and teacher far outweigh the minimal inhibitive effects data collection may have on student-teacher interaction (p. 11).

According to Gast and Gast, there are a number of dependent measures which teachers could use to monitor student progress. They suggest:

> For example, teachers could measure: number (number of words spelled correctly); frequency or rate (number of words read correctly per minute); percent correct (percent of addition problems performed correctly per page); duration (number of minutes it takes a student to return to his desk after instructed to do so by the teacher). The type of dependent measure selected will depend upon the target behavior and the instructional objective (p. 11).

These authors also suggest alternatives to continuous measurement.:

> A number of teaching systems such as Precision Teaching (Kunzelmann, 1970), Directive Teaching (Stephens, 1976), Responsive Teaching (Rieth & Hall, 1974), and Data-Based Program Modification (Deno & Mirkin, 1977) include continuous measurement of student progress as an integral part. Although continuous measurement yields a wealth of information upon which teachers can base their program decisions, such rigor may at times prove impractical (p. 14).

Gast and Gast (1981) suggested intermittent measurement as an alternative to continuous measurement. They indicated that progress could be measured every other session, rather than evaluating a student's performance every instructional session, for example. And they cautioned that noncontinuous measurement requires that data be collected systematically and reliably. The authors also described two different monitoring systems appropriate for classroom use, and the reader is referred to their manuscript for further details.

Gast and Gast suggest that teachers must avoid viewing the mandate for accountability as threatening, and they conclude:

> A more appropriate perspective would be to view frequent, systematic and reliable data collection as a process which can assist in teaching. An appropriate response to program evaluation has been offered by Bijou (1977), which states:
>
> > If the data show that the child is making progress, you smile and continue with it; if they do not show the child has been making progress, you frown and say, 'I've got a problem.' You frown for only a second or two because this kind of problem solving is one of the creative challenges of teaching (p. 11), [Gast and Gast, 1981, pp. 21-22].

Creative/Innovative Activities

A fourth way in which instruction was individualized in the classroom was through the provision of creative, innovative activities. These included learning centers and a variety of activities in all academic areas. All the "mainstreamed" children participated in most of these activities. This was another strong justification for their being in the regular classroom, since the resource room was designed to provide highly structured programming in the basic skills. The creative activities are described only briefly in this section since they cannot be fully appreciated without being pictured. The cost of reproducing the children's art was prohibitive.

Learning Centers. Among the most popular learning centers were those used in the math unit on metric measurement. It included meter sticks, metric ruler and measuring tapes, centimeter blocks, a scale and various weights including grams and a kilogram, various sizes of containers such as liters and half-liters for measuring liquids, etc. A few of these items at a time were set up on the tall "science" table in the back of the room. There was always a variety of activities at different levels from which to choose, and students chose activities according to their interest and ability. For example, Scott and George made up metric math problems for others to figure out. Susan and Sarah Jane used the calculator to find how tall everyone in the class would be if they were lying down in a long line with each person's head touching the other's feet - 3,124 cm. Eddie measured his chair with centimeter blocks.

There were also a number of learning centers in science. Some of them were follow-ups to the regular activities in which the whole class (including the mainstreamed students) participated. For example, they all made salt crystals following the introductory lessons on Systems and Subsystems. They worked in pairs, following combined written/pictorial directions. Each team made observations of their experiments and shared their discoveries with others in our circle at the end of the day.

The "special language" centers were also popular. These were usually bulletin board displays organized around special themes. In February, for example, there was a winter theme labeled "Cool Stuff" (an original idea by a colleague, Susan Daniel Henry). Children who had met criterion on the language assignment could participate in special language center activities. Again, there were a variety of selections. They could, for example, choose to do an acrostic on the word "cold" such as Bill did:

CAT
NO
LOVE
MAD

OR pick a story starter from the mittens hanging on the snowman's line, one of which read, "Suddenly I turned around and saw the Abominable Snowman . . . ."

Those who wrote really good stories were allowed to type them on the typewriter, and then (best of all) to have their stories read aloud to the group at circle time.

Other examples of learning center activities from stories in the basal readers or social studies units included:

1. Bring an item that is special to your family. Tell other about it.
2. Learn three letters in the visible alphabet. Draw a picture of the word they spell.
3. Choose a "Super Bowl" picture. Cut it out and write a sentence about it.
4. Draw a comic strip about a sailor that saw a mermaid.
5. Draw a picture of your secret place.
6. Write a tall tale about yourself.

Other Creative Activities. "Special spellers" were students who knew all the words on the day of the pretest (first day of the week) and did not need to complete the practice activities. For example, Alan made up scrambled words and original sentences about the metric words he chose to spell. He dictated his own test on the tape recorder at the end of the week.

The most exciting of our activities was the children's creation of a cardboard city. Marty Henton, an artist friend from the University, came to our class with several large pieces of cardboard boxes which she invited the children to put together as buildings for a city. She told them they could design any building they wanted to, that they were architects. The children worked in groups of four or five, all of which included the mainstreamed children. They created an "Empire State Building," a "World Trade Center," and a zoo. Each one was a unique imaginative creation. When the buildings were assembled, the children painted them with tempera paints, using large brushes. They had a noisy, wonderful time.

It is the opinion of this author that all children can be creative, and that special activities and slight modifications in ordinary classroom procedures can promote divergent thinking. These activities can and should include handicapped children.

Chapter Six

BUILDING A REALISTIC TOWER

The purpose of the study described in this monograph was to identify the mainstreaming-related issues that may have implications for the design of preservice programs for regular elementary teachers. It stops short of a "recommendations for change" section, since it was based primarily on a case study approach, one teacher in one classroom. Although it was set within the context of a knowledge-base summarized from the research of others, its primary objective was to accomplish what a case study can do best, to identify the issues which need further study. This chapter presents a summary of the issues that are recommended for further study:

1. What is presently known about teacher effectiveness and how does this knowledge base relate to the preservice education of "mainstream" teachers?

2. What seem to be the trends for the future in special education, teacher education, and schooling and how might these trends affect decisions about the nature and content of teacher education?

3. What generic skills, knowledge, and attitudes seem to be essential components of the elementary mainstream teacher's professional repertoire?

Knowledge Base on Teacher Effectiveness

The question about what needs to be changed in teacher education programs must be asked within the context of a larger question. Does it really make any difference what teachers do? This question is far too broad to be answered here. The reader is referred to others who have asked and answered the same question (Goodlad, 1979; Brophy, 1973, 1976; Brophy and Evertson, 1975; Cogan, 1975; Coleman, 1975; Gage, 1978; Good, 1979; Medley, 1979; McDonald, 1976; and others). Therefore, the emphasis of this brief summary will be on general instructional techniques, particularly classroom management.

Kifer (1980) cautioned, "Students can influence schools; schools can influence students; teachers can influence students; students can influence teachers. Given any one outcome, how does one know whether it is a result of students differing, or teachers differing, or schools differing? One doesn't" (p. 10). He asserted, however, that

> anyone of moderate sensibilities who has been in at least two schools and has had at least two teachers knows that both schools and teachers differ in the extent to which they influence individuals. Some are better than others! To know what we mean by "better" teachers and "better" schools are important questions. Just as important, I think, is to know what is worth teaching and how we would know it (p. 11).

Bloom (1980) suggested that educational researchers are now beginning to design studies which focus on equality of educational outcomes for students, rather than those which investigate equality of educational opportunity. He recommended that future studies look at alterable variables which have implications for practice. Bloom suggested the study of time-on-task as opposed to available time; student's cognitive entry characteristics rather than "intelligence"; the use of formative, as opposed to summative, test results; the qualities of effective teaching rather than good teachers; variables in the home environment (parent interactions, etc.) instead of parent status. He indicated that there are, of course, other alterable variables which might be studied. His summary presents the essence of the need for educational research:

> If we are convinced that little or nothing can be done to improve the learning of individual students, then our major effort must be invested in predicting school achievement and classifying students at an early age. . . . If we are convinced that a good education is necessary for all who live in modern society, then we must search for the alterable variables that can make a difference in the learning of children and adults in or out of the school (p. 385).

Nutter (1981) summarized the educational research in general classroom management and teacher effectiveness as it relates to mainstreaming. Her summary suggests some alterable variables that might be selected for further study. The following paragraphs refer to the summaries in her study.

Her view is that the mainstreamed classroom "presents the teacher with a wider range of the major academic and social variables associated with learners; and the mainstreamed student brings characteristics that are perceived . . . as the most difficult for the teacher to accommodate" (p. 131). Teachers' attitudes are influenced by the anticipated time and skills that teaching exceptional children would, in the view of the classroom teachers, require. Nutter pointed out that increases in classroom types of activities, in logistical and managerial concerns, and in alterations of instructional modes, space, materials, and time, are "critical to the successful integration of handicapped students into the regular classroom" (p. 132).

Nutter continued:

> The skills of classroom management have often been regarded as merely a set of low-level, commonsensical housekeeping duties; and, in the past, these skills have been regarded as much less important to learning than the content of instruction and the personal characteristics of the teacher. Too often, the matter of classroom management has been presented to future teachers as a collection of gimmicks and simple admonitions ranging from "be warm and enthusiastic" to "don't smile until Christmas." However, recent research in classroom management and the correlates of teacher effectiveness is beginning to support the

> body of folklore held by most teachers--that classroom management is important for learning and how to go about it--and organize that folklore into principles by which the consequences of teachers' behaviors can be predicted and salient missing behaviors identified and developed (pp. 132-133).

According to Nutter (1981), Kounin (1970) and associates concluded, after videotaping sessions in 30 self-contained classrooms, grades one through five, that specific behaviors exhibited by effective and ineffective teachers could be organized into broad categories. They confirmed this conclusion in a subsequent study conducted in 49 first- and second-grade classrooms. The four major categories they described were (1) Withitness. The teacher actively monitors the classroom and demonstrates to students through her actions that she is aware of what is happening in the room. (2) Overlapping. The teacher attends to more than one issue at a time when necessary. (3) Smooth transitions and momentum. The teacher maintains the pace of learning activities and provides for orderly changes in learning activities and/or physical movement in the room. (4) Maintaining group focus. The teacher keeps all students aware of their personal involvement in and responsibility for learning activities (Nutter, 1981, pp. 134, 135.).

Nutter (pp. 136-137) summarized research findings to show that mainstreamed pupils--and other children--who exhibit severe behavioral or academic problems have been helped through programs of "behavior modification, crisis intervention, and academic support aimed at individual children within the regular classroom management system." Furthermore, regular classroom routines were not disrupted by these programs, and time for "constructive teaching" actually increased. She concluded that classroom management skills leading to increased time-on-task for pupils effect a greater congruence between time needed by pupils for learning and time allowed for pupils to learn, one result of which is often a gain in student achievement.

Nutter (1981) also summarized the results of eight of her investigations of the relationship between time-on-task and students' gains in achievement, all of which are supportive of this relationship. She reported on the results of eight other studies of formal instructional methods and open, flexible methods, concluding that the more formal methods seem to foster greater academic achievement, though the "open" methods may have some advantages in terms of personal development and creativity.

The positive benefits for pupils' basic skills of direct instructional time in the classroom were summarized by Nutter (1981, pp. 140-145). Nutter pointed out, however, that simplistic interpretations leading to "undue emphasis on only direct academic instruction and on teachers' skills in managing classrooms for work involvement, are potentially dangerous" (p. 143). She listed a variety of factors that interrelate with students' behavior and achievement that comprise important elements of the learning environment, and related these factors to specific types of learners and their needs. Among the factors discussed by Nutter were classroom climate, knowledge about behavior theory, "openness" of teaching style and degree of teacher structuring and control of thinking. She referred (p. 148) to Brophy and Putman's (1979) characterization of "the most effective style of classroom leadership as 'authoritative' rather than 'authoritarian' or 'democratic' (in the short sense). She indicated that "the authoritative leader models consistently, seeks input, and emphasizes demonstration and instruction much more than prohibition and punishment, while clearly retaining authority." This author would conclude that it is premature to specify the variables in teacher effectiveness and classroom climate that can be translated into content for preservice programs. To suggest, however, that we do not know everything about these variables and may therefore do nothing, is so extremely cautious that it approaches professional irresponsibility.

Trends in the Future of Education

Only three types of trends will be summarized here, and these very briefly: (1) some predicted trends for the future of schools/schooling, (2) emerging trends in training for special educators, and (3) trends in the delivery of teacher education programs (extended preservice programs/ inservice).

Predictions for the future of schools are based on the social and economic realities of the present, as well as on summaries of what is and ought to be happening in public school programs.

The whole system of public education is presently under attack. Public confidence in education is low, due to concern over lack of discipline, declining achievement test scores, increasing community concern for crumbling traditional values, and the charge of schools' irrelevance for the real world being major concerns. Vouchers and tax credits have been proposed as ways to increase parental control over their children's education. In addition, education may be caught in the "struggle between those who feel the 'materialistic American Dream' is still possible to reach and those who argue for a less technological, more human-centered society" (Dede, 1980, p. 37). Dede suggests that there may be changes in the role of schools in different communities by the 1990s, with some focusing on the development of basic skills while others have broader functions.

Among the major issues that schools need to face in the future are as follows:

1. The basic curriculum has been revised little in recent years (Goldhammer, 1980).
2. Many curricular changes are blocked by long-standing academic debates, such as how children learn to read (Glaser, 1980) or behaviorism vs. humanism (Kaufman, 1977).
3. Schools are dispensing "maintenance learning"--the learning of fixed rules for given situations (Botkin, 1980).
4. There is a prodominance of competitive and individualistic classrooms, in which tests magnify differences in students (Ashton, 1980).

Goldhammer (1980) recommended that schools of the future must respond to the needs of the total population, rather than the academic elite alone. Buchen (1980) added that the meaning of "basic skills" has expanded, and this has added implications for change in the school curriculum:

> The basic skills of reading, writing, and computation have to be supplemented by futures skills that better equip students in a race against information production. Thus, we need to teach not only reading, but also speed reading, memory training, listening skills, recall skills, concentration techniques, etc. We need to teach not only writing, but also note-taking, visual-thinking, outlining, precise abstraction, epigramming, test-taking, and test-design skills. We need to teach not only mathematics, but also budgeting, graphing, statistics, income tax tables, cost-benefits determinations, catastrophe theory, etc. All these basic and future skills prime students as mental athletes and prepare them for more advanced and rigorous methodologies. But such subsequent progress is accompanied by extensive resource experiences which compel every student to become an informationist (p. 392).

These are but a few of the "futures" issues which have implications for changes in schools.

Training for special education teachers is now being increased in breadth rather than just in depth. The summary of the 1978 meeting of the National Association of State Directors of Special Education (NASDSE) clearly expressed the need for broad understanding:

> A common theme running through the presentation of the futures of special education was the need for decision makers to be able to project and develop long-range plans. It was felt, however, that those tasks become achievable only if the change agent has a sense of the history of special education and an understanding of events and forces currently impacting on regular, as well as special, education (p. 1).

Kauffman (1977), presenting a view on the future of special education for disturbed children, suggested that special educators need to be involved in the study of social policy issues, such as those which preceded the P.L. 94-142 mandate for an appropriate education for all handicapped children. Schenkat and Battaglini (1979) indicated that special educators need to be well-grounded in the understanding and application of the scientific method if they are to be effective observers, implementers, and evaluators. Haralick (1979) summarized some of the major pieces of sociological research that deal with special education, and urged that educators increase their understanding of sociology as it relates both to special education and special children in regular classes. Increasing knowledge about bias, the use and misuse of tests, and the placement of multicultural/bilingual children in special classes (Yohalen, 1980) also suggest new dimensions for training of special educators.

Interestingly, some of the classroom-based research with exceptional children suggests that what special educators really need to know is not captured in the massive competency lists that were once presumed essential. For example, Tawney (1978) lists three essential competencies for teachers of educable mentally handicapped students. He also describes the parameters through which the competencies were evaluated in the teacher's own classroom:

> 1. Do you interact positively (humanely) with children?
>   A simple teacher-child interaction instrument was devised to classify behavioral events as appropriate or inappropriate for teachers and children. Teachers were required to demonstrate that 90% of their interactions were appropriate responses to appropriate child behavior. Many examples were included in each category; for example, a teacher's positive response ("Mary, that's good; your work is correct.") to a child's behavior (raising a hand to signal completion of a written assignment).
>
> 2. Do your children work efficiently when you request them to do so?
>   An on-off task time sampling recording system was developed. Students were required to be on-task 80% of the time during teacher-defined work periods.
>
> 3. Do you produce positive and observable change in your student's academic performance, over time and ever increasingly more complex tasks?
>   Evaluators collected 30-day work samples of children's academic performance. In order for the teacher to meet criterion, 90% of the students were required to be responding at 90-100% correct 90% of the days in the total work sample (p. 71).

There is also a trend towards preparing special education teachers for new roles as classroom consultants. A pilot program established in 1980 in Fayette County, Kentucky, indicates that some of the functions of the consultant are as follows:

1. Work with regular teachers to help with appropriate activities and instructional methods or materials needed in mainstreaming.
2. Conduct annual reviews.
3. Monitor the psychological evaluations within the three year cycle and coordinate the educational assessments within that cycle.
4. Serve as the pre-screening agent in the referral process.
5. Conduct all other functions related to the special education program in the school as assigned.

The consulting teacher model in Vermont (McKenzie, 1976) is another example of the current trend. This new role will require skills in joint planning, consultation, collaboration, and negotiation which may be new to special education teachers. These are discussed in greater detail elsewhere (Denemark, Morsink, and Thomas, 1980).

Trends in the delivery of teacher education programs include both a movement to extend the initial preparation program and an increased concern with the content and quality of inservice training.

Denemark and Nutter (1980) summarized the case for extended programs of initial teacher preparation, pointing out the needs and present program inadequacies, including those imposed by P.L. 94-142. The authors also presented a summary of the knowledge base supporting extended programs which includes three categories of supportive documentation: systematic research, professional consenses, and logical analysis. This document also suggested some of the curricular components of initial teacher preparation. The lack of adequate "life space" for initial teacher preparation (in some cases as little as 18 semester hours, including student teaching) is cited as the major reason for the need to extend the time for preservice education. The extension is being viewed as a five or six year program (in some cases including a year-long internship), culminating in the achievement of professional status comparable to that of physicians or lawyers. Such a program is nearly ready for implementation at the Unversity of Kansas. Other institutions, such as the University of Florida, are engaged in intensive planning efforts along these lines.

There is also an increased emphasis on inservice training for regular educators. Several exemplary inservice programs on mainstreaming available through ERIC were summarized by Schwanke (1979). Corrigan and Howey (1980) recently developed an entire monograph on inservice teacher education as related to accommodating handicapped students within regular school settings. They conceptualized inservice as training that focuses on changing practices in specific schools or classrooms and suggested that a school-based teacher educator is the most appropriate person to coordinate this training. Howsam (1979) suggested that "inservice," as presently defined, should be abolished since it is based on the assumption that the teacher enters the profession without adequate preservice preparation. Inservice, he believes, should be place- or situation-specific, focusing on the application of learned skills to unique problems, or on the acquisition of knowledge for the implementation of new programs. Reynolds (1978) maintained that much of what passes for mainstreaming-related inservice training emphasizes the trivial aspects of implementation, such as how to fill out the placement forms. Others have indicated that public school personnel are not encouraged to participate in inservice when it is offered by University faculty. This fact suggests that public school teachers may question the credibility of training offered by those perceived as ivory tower educators.

Essential Components of the Elementary Teacher's Professional Repertoire for Educating Mildly Handicapped Children

Training for "mainstream" classroom teachers is in need of redesign. The National Support Systems Project has compiled a document outlining ten "clusters of capabilities" needed by teachers who work with handicapped students (Reynolds, 1980). Four of these clusters were examined in the present study. The ten clusters are as follows:

- --curriculum (what is deliberately taught in school)
- --teaching basic skills (literacy, life maintenance, and personal development)
- --class management
- --professional consultation and communications
- --teacher-parent-student relationships
- --student-student relationships
- --exceptional conditions
- --referral
- --individualized teaching
- --professional values

The NSSP document includes written responses to the definitions of and proposed training for these clusters from a variety of persons, including the parent of a handicapped child and teacher educators in liberal arts colleges and private schools. Others have used this document to redesign their own programs for preparing teachers. For example, Pennsylvania used it in the design of a set of guidelines for the preparation of teachers who can accommodate handicapped students. The Pennsylvania document specifies:

> Each educator completing an approved per-service program or approved in-service course should be prepared to demonstrate an acceptable level of achievement in the following competencies:
>
> 1. Understands the legal basis for educating students with handicaps in the least restrictive environment
> 2. Understands the implications which handicapping conditions have for the learning process
> 3. Recognizes students who may be in need of special services
> 4. Makes use of appropriate resource and support services
> 5. Confers with and reports to parents on educational programs for students with handicaps
> 6. Facilitates the social acceptance of persons with handicaps by encouraging positive interpersonal relationships
> 7. Uses individual, group and classroom management techniques for effective accommodation of students with handicaps
> 8. Assesses the educational needs of students with handicaps
> 9. Modifies instructional strategies to provide for the individual needs of students with handicaps
> 10. Evaluates classroom progress of students with handicaps (Pennsylvania Department of Education, 1980).

The movement towards improved teacher preparation extends beyond state departments and university faculties. It has support from the major professional teachers' organizations as well. Both the National Education Association (NEA) and The American Federation of Teachers (AFT) have expressed the concern that teachers lack training which can enable them to meet the needs of exceptional learners. These groups have provided support to efforts to upgrade professional preparation in this area.

There is as yet only a small research base to support the specification of skills needed by elementary classroom teachers who mainstream mildly handicapped children, although there is widespread fear that "regular" teachers either lack mainstreaming competencies or that the needed skills are quite different from those presently demonstrated by classroom teachers.

One of the few research-based efforts to identify mainstreaming skills needed by elementary teachers according to these teachers' perceptions was conducted by Redden and Blackhurst (1978), who used a critical incident technique. They identified six general areas in which elementary teachers believed they needed mainstreaming competencies:

--assisting in developing programs to help exceptional students gain acceptance in regular classrooms
--assessing special students' instructional level and learning needs
--designing alternate strategies for students with learning problems
--implementing individualized teaching strategies with help of resource personnel
--applying behavior management techniques that ensure positive interaction and facilitate learning for exceptional children
--evaluating student progress and using these data to revise programs.

The conclusions of the present experiment, based on approximately 470 hours of mainstream classroom teaching and over 800 typewritten pages of teacher-participant observation transcriptions, are essentially supportive of the six competency areas identified by Redden and Blackhurst. The only two areas which the present study suggests might be less manageable for the classroom teacher are (1) assessing instructional level and (2) evaluating student progress. These two activities were unquestionably completed in the present study, but in a less formal way than is presently recommended for the resource teacher who works with special children on a one-to-one basis.

Implications: Needs for Change in Teacher Education

Three issues, suggesting needs for change in the preservice preparation of regular elementary educators, emerge from the present study:

1. The classroom teacher has a unique role in "mainstreaming" the mildly handicapped child. It is not the same as the role of the special educator but neither is it less important. It requires some training which is similar and also much training which is different from that presently included in preservice programs for special education teachers. Perhaps the most

significant aspect of this role is the ability to help handicapped students develop a sense of self-worth within the group context. Wigginton (1975, p. 361) has maintained that until this sense of self-worth is developed, "nothing else (a teacher does) will make a difference."

Tyler (1980, p. 78), citing the work of Francis Chase and colleagues on the Urban Education Studies, concluded that "where teachers clearly care about their students, set high standards for their achievement and encouraged them, the children were learning. Where teachers showed no evidence of personal concern for the students and did not expect much from them, the children were learning little." This conclusion also applies to each of the case studies presented in this document. High standards were set for each of these children, and all of them achieved. Teacher concern was expressed as an expectation that they could learn and grow, and they did.

2. Both "regular" and "special" teachers need to develop new skills in collaboration/consultation/cooperation. The legal/constitutional requirements for full service to handicapped students have made obsolete the "go to your room and close the door" idea of single teacher's ownership of children. To meet the demands of shared responsibility, teachers must be trained to function as members of a team.

A task force of the American Association of Colleges for Teacher Education has summarized this aspect of the qualities of the new professional educator as follows:

> . . . This (new) professional is an accepting person--capable of giving unconditional acceptance to students' differences, as well as recognition to the contributions of parents and others who share responsibility for a child's education. He/she is trained as a member of a differentiated instructional team, able to utilize both human and technological resources, able to function as a team member--sometimes in a leadership role, other times as a supportive observer, sometimes as a catalyst, and other times as a consumer of technical assistance (1978, p. 3).

The need for regular/special teacher collaboration in the education of the mildly handicapped child is not a new idea. As early as 1973, former Department of Education Assistant Secretary Edwin Martin argued that regular and special education were not dichotomous, and that teacher education ought to be reconceptualized (Martin, 1973). Much of the recent work by Reynolds (1978) has focused on the need to end the dichotomy by restructuring teacher education programs and renegotiating teachers' roles.

3. The most important new concept for the elementary teacher may be that meeting children's diverse needs requires an expansion of the teacher's professional repertoire. Presently preservice programs fail to provide a sufficiently large repertoire of methodologies to enable the beginning teacher to deal with children who have any significant kinds of differences. Teacher education programs that prepare beginning teachers to use only

one technique (for example, the basal reader) are entirely inadequate. This is not to suggest that teachers should be casually eclectic, blindly believing that all methods are equally appropriate. Rather, it suggests a need for teachers to understand a wide variety of techniques, the appropriate times to use them, the students for whom particular techniques were designed, where to seek additional help, and when to modify or continue specific techniques. Teachers prepared to implement one method only develop a mindset for classroom homogeneity which encourages the practice of referring deviating children for special education. Ashton (1980) concurred with the need for an expanded repertoire:

> The Follow-Through evaluations revealed that teacher effects vary for different student outcomes: for example, a high rate of drill, practice and praise resulted in significant gains in reading and math scores for low SES children in grades one and three, while opportunities for child-selected activities and considerable self-direction resulted in evidence of greater independence, cooperation, curiosity, problem-solving ability, and increased school attendance (Stallings, 1977). Thus, teachers need to be trained to use a variety of techniques, depending on the specific outcomes intended (p. 578).

It is important to reiterate that the most important finding of this study is that elementary classroom teachers should not be trained as adjunct special educators, except in the most generic sense that there are commonalities in good teaching. Elementary teachers should be prepared to serve better in their own roles as large group classroom managers who can (1) facilitate the acceptance and integration of all children into the "mainstream," (2) select, implement, and measure the effectiveness of a wide variety of instructional techniques, and (3) function as cooperative and respected members of an instructional team that shares responsibility of professionals from a variety of specialty areas, both within and outside colleges of education.

Summary

Public schools were given "A" report cards by only 8% of the American public, according to a 1979 Gallup Poll (Phi Delta Kappan, 1979). The largest percentage of respondents (23%) felt that improvement in the quality of teachers was needed before they would give "A's" to their schools.

The improvement of teacher education programs requires that we develop and transmit a "professional culture," as Goldhammer (1980) noted:

> Education in this country has always been plagued by a "know nothing" perspective relative to governance and leadership. . . Education, like medicine, has a knowledge base which is essential as the foundation upon which relevant, meaningful and appropriate decisions can be made. Problems of education are too complex to leave to the ignorant and the ill-tutored or poorly trained professionals to resolve. The mobilization, retraining, and improvement of professional competence to deal on as high a level of

> scientific capability as possible with the problems confronting the renovation of education is the nation's number one need if we are ever to develop an educational system appropriate to the developmental requirements of our children and youth (p. 8).

Howsam et al. (1976) concur with Goldhammer's recognition of the need for teachers who are knowledgeable professionals:

> Through most of its history, teaching has been dependent upon personal insights, without the underpinnings of empirical study of systematic theory. In 1975 we reached the end of an era. Society now demands a new breed of teacher--a well prepared, highly motivated professional capable of understanding a broad range of learning problems and of designing and implementing curricular and instructional strategies to solve them (p. 80).

The implementation of this culture will require collaboration between campus and field personnel, as in the present study. There are, of course, other creative approaches, such as that suggested by Christensen (1980):

> Master teachers could be released from the classrooms to travel and meet with other teachers. Such a master carries a sense of validity and authority, someone from the front-line trenches and as the "visitor in the midst" is often able to gain confidence quickly and give practical help without fear of evaluative backlash for needy teachers (p. 460).

Whatever the approach, it is imperative that teacher educators continue to strive for professionalism. Perhaps it is expressed best by Denemark, Morsink, and Thomas (1980):

> Teacher educators have known that teaching and learning could and should be better, but we have devoted little time to reflecting upon the things which we would like to have in our profession and in American education. Aspirations have a way of conditioning reality, however, and too often lack of vision becomes a major force in perpetuating the problems we confront. Speaking of the power of an ideal, John Dewey long ago reminded us that just as the aims and ideals which are generated through imagination change as they are applied to existent conditions, so the interaction between the ideal and the real serves to modify existent conditions. . . . Teacher education must help teachers in preparation to be in contact with reality, but it must help them also to realize what could be. Beginning teachers must be able to survive in the classroom as it is, but if education is to improve--and it must--they also must have a vision of its potential and the skills to alter its course (p. 57).

This teacher educator stepped down from the ivory tower to re-experience the realities of the mainstreamed classroom. The impact of those realities has altered my perception of what can be done as well as helping me to think creatively about some better ways to do what must be done.

One of the things that must be done is to help our dedicated public school personnel feel that we in higher education can help them think beyond what is to what could be. They have to believe in dreams of the future, as poet Langston Hughes (1967) suggests:

Hold fast to dreams
For if dreams die
Life is a broken-winged bird
That cannot fly.

Hold fast to dreams
For when dreams go
Life is a barren field
Frozen with snow.

Believing in dreams is hard to do when you are immersed in the reality of schools as I was the semester I taught 24 third graders in an elementary mainstream classroom. That is why front-line educators need to form partnerships with realistic dreamers who reside in ivory towers. Public school implementors, who are necessarily caught up in compliance, routine maintenance and survival issues, now have a greater-than-ever need to collaborate with higher education faculty who can help them, through field-based research and development, find the scientific bases for the improvement of their art.

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